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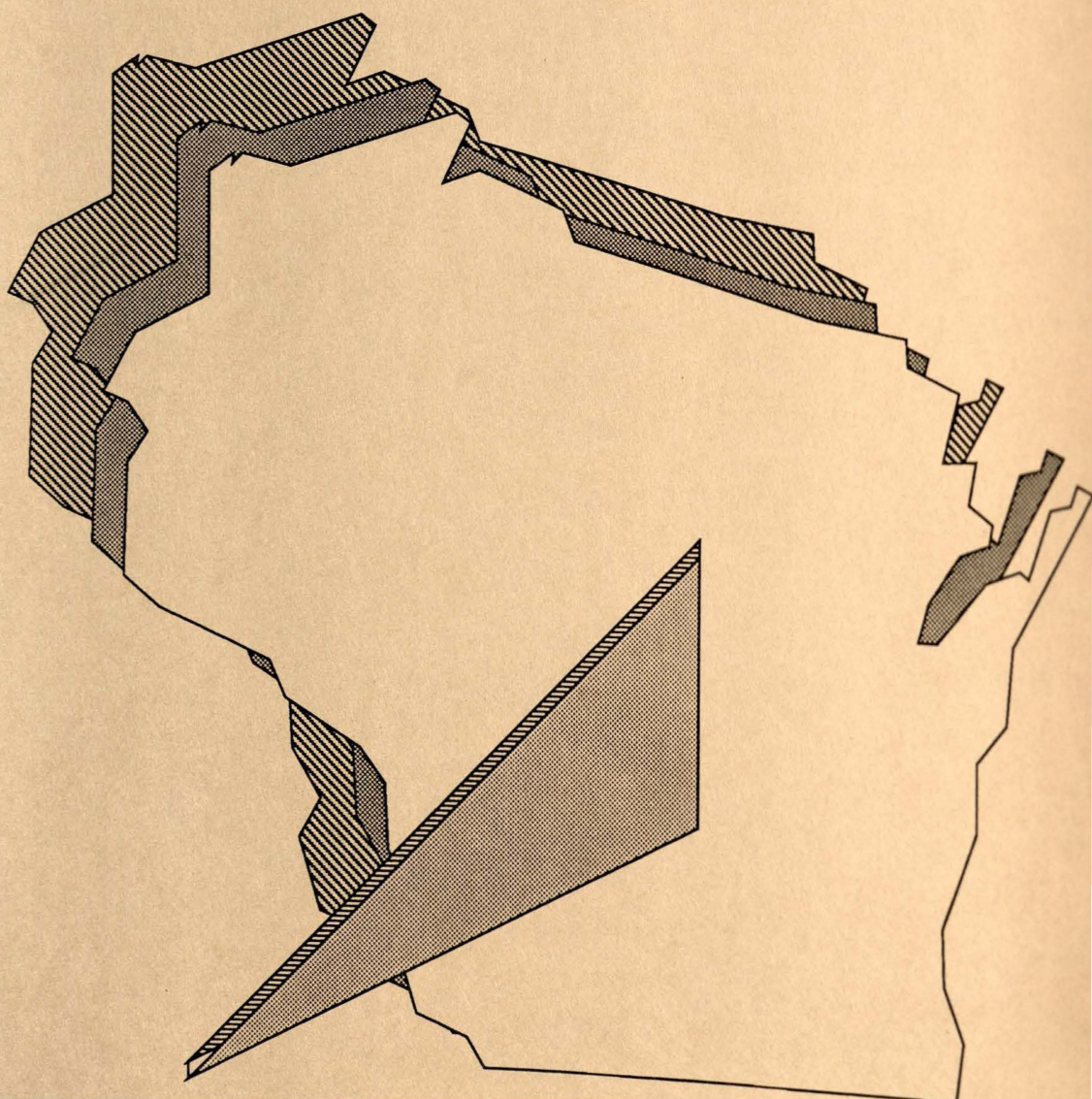
Wisconsin's Forest Statistics, 1987: An Inventory Update

W. Brad Smith and Jerold T. Hahn



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Foreword

Forest Inventory and Analysis (FIA) is a continuing endeavor as mandated by the Forest and Rangeland Renewable Resources Planning Act of 1974, which was preceded by the McSweeney-McNary Forest Research Act of 1928. The objective of FIA is to periodically inventory the Nation's forest land to determine its extent, condition, and volume of timber, growth, and depletions. Up-to-date resource information is essential for framing intelligent forest policies and programs. USDA Forest Service regional experiment stations are responsible for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for Forest Inventory and Analysis work in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.

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Wisconsin's Forest Statistics, 1987: An Inventory Update

W. Brad Smith and Jerold T. Hahn

Update Highlights

Timberland

- Timberland area declined from 14.8 million acres in 1983 to 14.7 million acres in 1987, a loss of less than 1 percent.
- Maple-basswood is still the dominant forest type with 4.0 million acres or 27 percent of Wisconsin's 1987 timberland area.
- The area of jack pine forest type declined 3.1 percent to 530,000 acres as the passive management of this type took its toll.
- Red pine is still the most popular plantation species as shown by the 22,000-acre gain in the red pine forest type since 1983.

Timber Volume

- Growing-stock volume in 1987 is 16.5 billion cubic feet, 7 percent higher than the 15.4 billion cubic feet reported in 1983.
- Average growing-stock volume per acre in 1987 was 1,120 cubic feet, compared with 1,046 cubic feet in 1983.
- Sawtimber volume totaled 39.5 billion board feet in 1987, up 13 percent from 1983.

Net Growth

- Annual net growth increased from 33 cubic feet per acre per year in 1982 to 39 cubic feet in 1986.
- Mortality declined from 1.0 percent of inventory in 1982 to 0.6 percent in 1986. Much of the decline is attributed to increased management reflected by the update.

The growth processor used in this study does not accommodate catastrophic mortality. Therefore, the volume estimate of balsam fir and elm could be overstated in this report. However, because of the decline in Dutch elm disease and the spruce budworm population, we feel that the volume estimates presented for these species are usable as printed.

Removals

- Growing-stock removals have risen sharply since 1982, climbing from 285 million cubic feet to 329 million cubic feet annually in 1986. Major industrial expansion in the waferboard and pulp industry in northern Wisconsin is primarily responsible for the increase.
- Aspen growth and removals in Wisconsin have reached parity. As older unmanaged stands of aspen convert to more tolerant forest types, losses in aspen species have occurred.

Biomass

- Tree biomass totaled 948 million green tons in 1987. Of this volume, 74 percent is in growing-stock trees, 13 percent is in cull trees, and 13 percent is in trees less than 5 inches d.b.h.
- The average green weight per cubic foot (including bark) for softwood species was 45 pounds; the average for hardwoods was 53 pounds.

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Background

Tree growth models developed at the North Central Forest Experiment Station have made it possible for the Forest Inventory and Analysis (FIA) work unit to update inventory data to estimate the current resource. The purpose of this report is to present updated statistics for the State of Wisconsin that will be used for the 1990 assessment required by the Forest and Rangeland Renewable Resources Planning Act of 1974. The tables provide data by forest survey unit (fig. 1) and represent the timberland base as of January 1, 1987. The term "update," as it is used here, is an estimate of current forest statistics derived by modeling the dynamic change in a forest from a known time in the past. The major components of this change are land change, growth, mortality, regeneration, and removals.

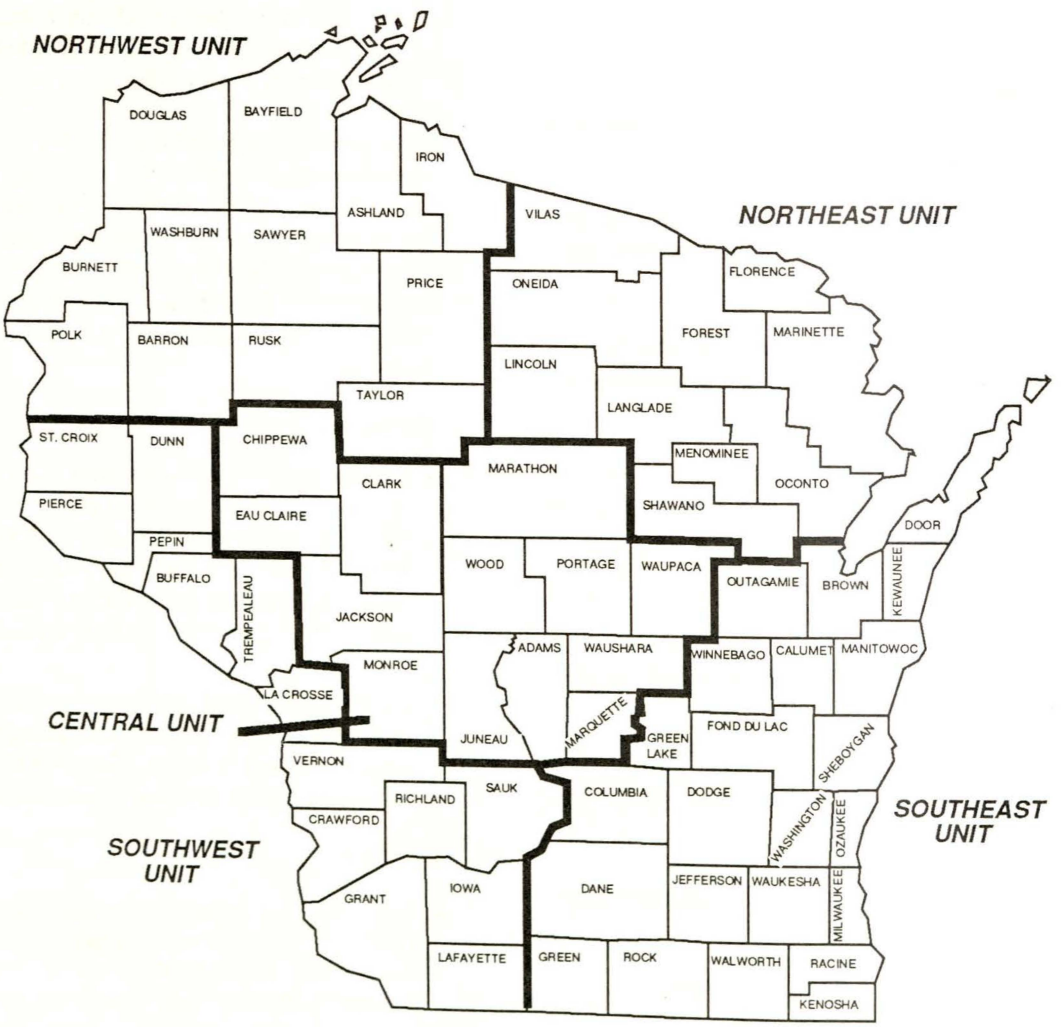

Figure 1.--*Forest inventory units in Wisconsin.*

Methodology

Land Base Change

The basic sample design used by FIA in the North Central Region is a two-phase sample consisting of (1) a photo sample to estimate forest-nonforest area and (2) a ground phase, which is a subsample of the photo sample, to provide information about the volume and condition of the forest.

New photo work for the entire region would be too costly and time consuming with current technology. However, we've found that for update periods of 10 years or less, area change at the State level can be estimated using trend analysis and by gathering information from local resource managers. These data then provide the first-phase area factors to be applied to the updated plots.

We assumed timberland area for public and industry ownerships was stable during the update period. For all other ownerships a modest annual decline of about 0.1 percent was assumed, which reflects the view of resource managers that urbanization and agricultural expansion have not seriously eroded the timberland base of the region.

The objectives of the diverse group of owners that hold Wisconsin's forest land play a significant role in the stability of the timberland base. Knowledge of these objectives is essential to strategic forest planning. Public agencies are mandated by law to provide detailed information about management plans that outline the policies and programs designed to ensure a viable forest resource into the future.

The timberland area figures presented here represent the most recent data available when the update was processed. The reader is cautioned to contact the appropriate public agency to verify or update area figures for any analysis that may be sensitive to local changes in the timberland base, such as recently designated reserved or deferred forest land. Area and volume figures would have to be adjusted accordingly for any ownerships affected by significant changes in the timberland base.

Additional information is available about nonindustrial private owners and their objectives in the University of Wisconsin Cooperative Extension Report, "The Wisconsin Private Woodland Owner: A Profile" (Roberts *et al.* 1986).

Growth and Mortality

We used the Stand and Tree Evaluation and Modeling System (STEMS) (Belcher 1981) to update 7,155 forest inventory plots from the 1983 field survey to the year 1987. STEMS is a distance-independent, individual tree growth model designed to simulate tree growth and mortality for a diverse range of forest conditions.

Growth and mortality functions were calibrated and validated with data from throughout the Lake States (Buchman 1983, Holdaway and Brand 1983,1985). Test projections over a range of forest conditions produced reliable results when compared with remeasurement data from the Lake States. Adjustment factors derived from recent remeasurement data in the Lake States were used to fine tune the model and improve precision (Holdaway 1985).

Regenereation

Although STEMS regeneration routines for the Lake States had not been fully developed at the time of the update, the outcome was not significantly affected. Most trees that became established on harvested land or in seedling stands at the beginning of the update would not have grown to merchantable size by the end of the 4-year period. Biomass figures in table 19 for trees under 5 inches in diameter will be conservative due to inability of the model to introduce trees to the 1-inch diameter class.

Removals

Removals data were derived by trend analysis using periodic pulpwood (Blyth and Smith 1985), saw log (Blyth *et al.* 1985), and veneer (Blyth and Smith 1984) production reports and base year data for all removals provided in the 1983 Wisconsin report (Raile 1985). Removals attributed to loss of timberland were made by adjusting plot expansion factors to arrive at a specified set of current area figures by forest type. Estimates of timber removals in the Lake States are reviewed in more detail in the article, "Tracking Timber Demand in the Lake States" (Smith and Blyth 1986).

The Lake States version of STEMS was modified to simulate actual removals. Computerized management guides (Brand 1981) were used to select a subset of inventory plots that were eligible for silvicultural treatment during the update period.

These guides were used in lieu of detailed information on Wisconsin management strategies. A special removals algorithm scanned each selected plot to determine if it would be cut. The volume from cut plots was accumulated until the estimated volume of growing-stock removals by species was reached. Volume estimates were produced using volume equations developed for the Lake States (Hahn 1984 and Smith 1985).

All area and volume figures for the update were reviewed by personnel from the Wisconsin Department of Natural Resources, the National Forest System, industry resource managers, and other private individuals to assure reasonableness and consistency. A more detailed description of the methodology will be presented later in a publication on inventory updating procedures in the North Central Region.

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Appendix

Tree Species Groups in Wisconsin[1]

SOFTWOODS
Eastern white pine . . . . . *Pinus strobus*
Red pine . . . . . *Pinus resinosa*
Jack pine . . . . . *Pinus banksiana*
White spruce . . . . . *Picea glauca*
Black spruce . . . . . *Picea mariana*
Balsam fir . . . . . *Abies balsamea*
Tamarack . . . . . *Larix laricina*
Northern white-cedar . . . . . *Thuja occidentalis*
Other softwoods
  Norway spruce . . . . . *Picea abies*
  Scotch pine . . . . . *Pinus sylvestris*
HARDWOODS
White oak
  White oak . . . . . *Quercus alba*
  Swamp white oak . . . . . *Quercus bicolor*
  Bur oak . . . . . *Quercus macrocarpa*
Select red oak
  Northern red oak . . . . . *Quercus rubra*
Other red oak
  Northern pin oak . . . . . *Quercus ellipsoidalis*
  Black oak . . . . . *Quercus velutina*
Select hickory
  Shagbark hickory . . . . . *Carya ovata*
Other hickory
  Pignut hickory . . . . . *Carya glabra*
  Bitternut hickory . . . . . *Carya cordiformis*
Hard maple
  Sugar maple . . . . . *Acer saccharum*
  Black maple . . . . . *Acer nigrum*
Soft maple
  Red maple . . . . . *Acer rubrum*
  Silver maple . . . . . *Acer saccharinum*
American beech . . . . . *Fagus grandifolia*
Yellow birch . . . . . *Betula alleghaniensis*
Black ash . . . . . *Fraxinus nigra*
White and green ash
  White ash . . . . . *Fraxinus americana*
  Green ash . . . . . *Fraxinus pennsylvanica*
Balsam poplar . . . . . *Populus balsamifera*
Eastern cottonwood . . . . . *Populus deltoides*
Black willow . . . . . *Salix nigra*
Bigtooth aspen . . . . . *Populus grandidentata*
Quaking aspen . . . . . *Populus tremuloides*
Basswood . . . . . *Tilia americana*
Black walnut . . . . . *Juglans nigra*
Black cherry . . . . . *Prunus serotina*
Butternut . . . . . *Juglans cinerea*
Elm
  American elm . . . . . *Ulmus americana*
  Slippery elm . . . . . *Ulmus rubra*
  Rock elm . . . . . *Ulmus thomasii*
Paper birch . . . . . *Betula papyrifera*
River birch . . . . . *Betula nigra*
Other hardwoods
  Boxelder . . . . . *Acer negundo*
  Hackberry . . . . . *Celtis occidentalis*
  Black locust . . . . . *Robinia pseudoacacia*
  Honey locust . . . . . *Gleditsia tryacanthos*
  Red mulberry . . . . . *Morus rubra*
  Northern catalpa . . . . . *Catalpa speciosa*

[1] *The common and scientific names are based on Little, Elbert L. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service. 375 p.*

Metric Equivalents of Units Used in This Report

1 acre = 4,046.86 square meters or 0.405 hectare.
1,000 acres = 405 hectares.
1 cubic foot = 0.0283 cubic meter.
1 foot = 30.48 centimeters or 0.3048 meter.
1 inch = 25.4 millimeters, 2.54 centimeters, or 0.0254 meter.

Definitions

Acceptable trees.—Growing-stock trees of commercial species that meet specified standards of size and quality.

Basal area.—The area in square feet of the cross section at breast height of a single tree. When the basal area of all trees in a stand are summed, the result is usually expressed as square feet of basal area per acre.

Biomass.—The total above-ground weight, excluding foliage, of all live trees reported in green tons. Biomass is made up of 5 components:

Growing-stock bole and stump.—Biomass of a growing-stock tree from ground level to a 4-inch top.

Growing-stock top and limbs.—Biomass of a growing-stock tree above a 4-inch top and all limbs below the 4-inch top.

Cull bole and stump.—Biomass of a cull tree from ground level to a 4-inch top.

Cull top and limbs.—Biomass of a cull tree above a 4-inch top and all limbs below the 4-inch top.

1- to 5-inch trees.—Above ground biomass of all live trees 1- to 5-inches in diameter at breast height.

Commercial species.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam and hawthorn.)

County and municipal land.—Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Cropland.—Land under cultivation within the past 24 months; including cropland harvested, crop failures, cultivated summer fallow, idle cropland used only for pasture, orchards, and land in soil improvement crops, but excluding land cultivated in developing improved pasture.

Cull.—Portions of a tree that are unusable for industrial wood products because of rot, form, or other defect.

Diameter classes.—A classification of trees based on diameter outside bark, measured at breast height (4.5 feet above the ground). (Note: d.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate mid-point for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.)

Farm.—Any place from which $1,000 or more of Agricultural products were produced and sold during the year.

Farmer-owned land.—Land owned by farm operators. (Note: Excludes land leased by farm operators from nonfarm owners, such as railroad companies and States.)

Forest industry land.—Land owned by companies or individuals operating primary wood-using plants.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparison of basal area and/or number of trees, by age or size and spacing with specified standards.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide. Also see definitions for land area, timberland, nontimberland, reserved forest land, stocking, woodland, and water.

Forest trees.—Woody plants having a well-developed stem and usually more than 12 feet tall at maturity.

Forest type.—A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types are:

Jack pine.—Forests in which jack pine comprises a plurality of the stocking. (Common associates include eastern white pine, red pine, aspen, birch, and maple.)

Red pine.—Forests in which red pine comprises a plurality of the stocking. (Common associates include eastern white pine, jack pine, aspen, birch, and maple.)

White pine.—Forests in which eastern white pine comprises a plurality of the stocking. (Common associates include red pine, jack pine, aspen, birch, and maple.)

Balsam fir.—Forests in which balsam fir and white spruce comprise a plurality of stocking with balsam fir the most common. (Common associates include aspen, maple, birch, northern white-cedar, and tamarack.)

White spruce.—Forests in which white spruce and balsam fir comprise a plurality of the stocking with white spruce the most common. (Common associates include aspen, maple, birch, northern white-cedar, and tamarack.)

Black spruce.—Forests in which swamp conifers comprise a plurality of the stocking with black spruce the most common. (Common associates include tamarack and northern white-cedar.)

Northern white-cedar.—Forests in which swamp conifers comprise a plurality of the stocking with northern white-cedar the most common. (Common associates include tamarack and black spruce.)

Tamarack.—Forests in which swamp conifers comprise a plurality of the stocking with tamarack the most common. (Common associates include black spruce and northern white-cedar.)

Oak-hickory.—Forests in which northern red oak, white oak, bur oak, or hickories, singly or in combination, comprise a plurality of the stocking. (Common associates include jack pine, elm, and maple.)

Elm-ash-soft maple.—Forests in which lowland elm, ash, cottonwood, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include birches, spruce, and balsam fir.)

Maple-birch.—Forests in which sugar maple, basswood, yellow birch, upland American elm, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include white pine, elm, and basswood.)

Aspen.—Forests in which quaking aspen or bigtooth aspen, singly or in combination, comprise a plurality of the stocking. (Common associates include balsam poplar, balsam fir, and paper birch.)

Paper birch.—Forests in which paper birch comprises a plurality of the stocking. (Common associates include maple, aspen, and balsam fir.)

Gross area.—The entire area of land and water as determined by the Bureau of the Census.

Growing-stock trees.—Live trees of commercial species qualifying as acceptable trees. (Note: Excludes rough, rotten, and dead trees.)

Growing-stock volume.—Net volume in cubic feet of growing-stock trees 5 inches d.b.h. and over, from a 1-foot stump to a minimum 4 inch top diameter outside bark of the central stem. Cubic feet can be converted to cords by dividing by 79 cubic feet per solid wood cord.

Hardwoods.—Dicotyledonous trees, usually broad-leaved and deciduous.

Idle farmland.—Includes former cropland, orchards, improved pastures, and farm sites not tended within the past 2 years and presently less than 16.7 percent stocked with trees.

Improved pasture.—Land currently improved for grazing by cultivating, seeding, irrigating, or clearing of trees or brush and less than 16.7 percent stocked with live trees.

Indian land.—All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

Industrial wood.—All roundwood products, except fuelwood.

Land area.—*Bureau of the Census.*—The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth of a statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

Forest Inventory and Analysis.—The same as the Bureau of the Census, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

Live trees.—Growing-stock, rough, and rotten trees 1 inch d.b.h. and larger.

Marsh.—Nonforest land that characteristically supports low, generally herbaceous or shrubby vegetation and that is intermittently covered with water.

Merchantable.—Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

Miscellaneous federal land.—Federal land other than national forest.

Miscellaneous private land.—Privately owned land other than forest-industry and farmer-owned land.

Mortality.—The volume of sound wood in growing-stock and sawtimber trees that die annually.

National forest land.—Federal land that has been legally designated as national forest or purchase units, and other land administered by the USDA Forest Service.

Net annual growth of growing-stock.—The annual change in volume of sound wood in live sawtimber and poletimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Net annual growth of sawtimber.—The annual change in the volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

Net volume.—Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide and more than 1 acre in area to qualify as nonforest land.)

a. *Nonforest land without trees.*—Nonforest land with no live trees present.

b. *Nonforest land with trees.*—Nonforest land with one or more trees per acre at least 5 inches d.b.h.

Nonstocked land.—Timberland less than 16.7 percent stocked with growing-stock trees.

Nontimberland.—(a) Woodland and (b) reserved forest land.

Other removals.—Growing-stock trees removed but not utilized for products, or trees left standing but "removed" from the timberland classification by land use change. Examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Ownership.—Property owned by one owner, regardless of the number of parcels in a specified area.

Pasture and range.—Land which is currently improved for grazing by cultivation seeding or irrigation plus land on which the natural plant cover is composed principally of native grasses, forbs, or shrubs valuable for forage.

Physiographic class.—A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

Xeric sites.—Very dry soils where excessive drainage seriously limits both growth and species occurrence. Example: sandy jack pine plains.

Xeromesic sites.—Moderately dry soils where excessive drainage limits growth and species occurrence to some extent. Example: dry oak ridge.

Mesic sites.—Deep, well-drained soils. Growth and species occurrence are limited only by climate.

Hydromesic sites.—Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent. Example: better drained bottomland hardwood sites.

Hydric sites.—Very wet sites where excess water seriously limits both growth and species occurrence. Example: frequently flooded river bottoms and spruce bogs.

Poletimber stands.—(See stand-size class.)

Poletimber trees.—Growing-stock trees of commercial species at least 5 inches d.b.h. but smaller than sawtimber size.

Reserved forest land.—Forest land sufficiently productive to qualify as timberland but withdrawn from timber utilization through statute, administrative regulation, designation, or exclusive use for Christmas tree production, as indicated by annual shearing.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, and/or do not meet regional specifications

for freedom from defect primarily because of rot; that is, when more than 50 percent of extra cull volume in a tree is rotten.

Rough trees.—(a) Live trees of commercial species that do not contain at least one merchantable 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, and/or do not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) all live trees of noncommercial species.

Salvable dead trees.—Standing or down dead trees that are considered merchantable by regional standards.

Saplings.—Live trees 1 to 5 inches d.b.h.

Sapling-seedling stands.—(See stand-size class.)

Saw log.—A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter outside bark (d.o.b.) for softwoods of 7 inches (9 inches for hardwoods) or other combinations of size and defect specified by regional standards.

Saw log portion.—That part of the bole of sawtimber trees between the stump and the saw log top.

Saw log top.—The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7 inches d.o.b. for soft- woods and 9 inches d.o.b. for hardwoods.

Sawtimber stands.—(See stand-size class.)

Sawtimber trees.—Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9 inches d.b.h. Hardwoods must be at least 11 inches d.b.h.

Sawtimber volume.—Net volume of the saw log portion of live sawtimber in board feet, International 1/4-inch rule, from stump to a minimum 7 inches top diameter outside bark (d.o.b.) for softwoods and a minimum 9 inches top d.o.b. for hardwoods.

Seedlings.—Live trees less than 1 inch d.b.h. that are expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Short-log (rough tree).—Sawtimber-size trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

Site index.—An expression of forest site quality based on the total height of free-growing dominant or codominant trees of a representative species in the forest type at age 50.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Stand.—A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Stand-age class.—Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Stand-area class.—The extent of a continuous forested area of the same forest type, stand-size class, and stand-density class.

Stand-size class.—A classification of forest land based on the size class of all live trees; that is, sawtimber, poletimber of seedlings and saplings. Only those types contributing to no more than 16 percent stocking at a point will be used to determine stand-size class. Remember that stands with less than 16.7 percent stocking in growing stock trees will be classified as nonstocked. Noncommercial trees are not used for determining stand-size classes.

Sawtimber stands.—Stands with at least half of the all live stocking in sawtimber and poletimber trees and with the sawtimber stocking equal to or larger than the poletimber stocking.

Poletimber stands.—Stands with at least half of the all live stocking in poletimber and sawtimber trees and with the poletimber stocking larger than the sawtimber stocking.

Sapling-seedling stands.—Stands with more than half of the all live stocking in saplings and/or seedlings.

State land.—Land owned by States, or land leased to these governmental units for 50 years or more.

Stocking.—The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard. A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees reach 5 inches d.b.h. Stands are grouped into the following stocking classes:

Overstocked stands.—Stands in which stocking of trees is 134.0 percent or more.

Fully stocked stands.—Stands in which stocking of trees is from 101.0 to 133.9 percent.

Medium stocked stands.—Stands in which stocking of trees is from 61.0 to 100.9 percent.

Poorly stocked stands.—Stands in which stocking of trees is from 16.7 to 60.9 percent.

Nonstocked areas.—Timberland on which stocking of trees is less than 16.7 percent.

Timber removals from growing stock.—The volume of sound wood in live sawtimber and poletimber trees removed annually for forest products (including roundwood products and logging residues) and for other removals. Roundwood products are logs, bolts, or other round sections cut from trees. Logging residues are the unused portions of cut trees plus unused trees killed by logging. Other removals are growing-stock trees removed by cultural operations such as timber stand improvement work, and by land clearing and changes in land use.

Timber removals from sawtimber.—The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals.

Timberland.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as timberland are capable of producing more than 20 cubic feet per acre per year of annual growth under management. Currently inaccessible and inoperable areas are included, except when the areas involved are small and unlikely to become suitable for producing industrial wood in the foreseeable future.) Also see definition of pastured timberland

Tree biomass.—The total aboveground weight (including the bark) of all live trees.

Tree size class.—A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

Upper stem portion.—That part of the bole of sawtimber trees above the saw log top to a minimum top diameter of 4 inches outside bark or to the point where the central stem breaks into limbs.

Urban and other areas.—Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards; cemeteries; roads; railroads; airports; beaches; powerlines; and other rights-of-way; or other nonforest land not included in any other specified land use class.

Water.—*Bureau of the Census.*—Permanent inland water surfaces, such as lakes, reservoirs, and ponds having 40 acres or more of area; streams, sloughs, estuaries, and canals one-eighth of a statute mile or more in width.

Noncensus.—Permanent inland water surfaces, such as lakes, reservoirs, and ponds having 1-39.9 acres of area; streams, sloughs, estuaries, and canals 120 feet to one-eighth of a statute mile in width.

Windbreak.—A group of trees less than 120 feet wide used for the protection of soil, cropfields, and buildings in use.

Wooded pasture.—Improved pasture with more than 16.7 percent stocking in live trees but less than 25 percent stocking in growing-stock trees. Area is currently improved for grazing or there is other evidence of grazing.

Wooded strip.—An acre or more of natural continuous forest land that would otherwise meet survey standards for timberland except that it is less than 120 feet wide.

Woodland.—Forest land incapable of producing 20 cubic feet per acre of annual growth or of yielding crops of industrial wood under natural conditions because of adverse site conditions. (Note: Adverse conditions include shallow soils, dry climate, poor drainage, high elevation, steepness, and rockiness.)

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Table 1.--Area of land by land class, Wisconsin, 1983 and 1987

(In thousand acres)

Land class	All units		Forest survey unit									
			Northeast		Northwest		Central		Southwest		Southeast	
	1983	1987	1983	1987	1983	1987	1983	1987	1983	1987	1983	1987
Forest land												
Timberland												
Jack pine	546.5	529.8	81.7	76.3	247.8	242.6	203.1	198.0	11.2	10.2	2.7	2.7
Red pine	478.2	500.4	157.8	164.7	132.6	136.8	135.5	141.6	40.1	43.1	12.2	14.2
White pine	225.6	230.3	81.1	82.9	36.5	34.6	77.9	78.7	13.7	15.8	16.4	18.3
Balsam fir	419.4	401.4	187.9	177.5	219.6	212.0	11.9	11.9	-	-	-	-
White spruce	61.4	61.4	19.8	19.8	31.9	31.9	2.2	2.2	2.5	2.5	5.0	5.0
Black spruce	273.0	277.3	147.5	150.2	111.2	112.8	11.6	11.6	-	-	2.7	2.7
Northern white-cedar	370.7	380.4	186.0	189.8	107.8	110.6	23.3	25.3	-	-	53.6	54.7
Tamarack	222.7	219.0	63.0	60.1	111.5	111.5	39.0	38.2	-	-	9.2	9.2
Oak-hickory	2,858.7	2,847.6	149.3	143.8	415.6	410.9	937.6	935.9	1,063.4	1,061.5	292.8	295.5
Elm-ash-soft maple	1,240.6	1,224.0	235.9	226.1	414.9	412.1	271.5	269.8	117.8	115.5	200.5	200.5
Maple-basswood	3,996.9	4,017.3	1,280.2	1,295.4	1,478.7	1,487.7	506.2	509.6	497.9	495.6	233.9	229.0
Aspen	3,261.5	3,226.3	1,026.7	1,017.5	1,508.3	1,498.9	577.5	569.1	85.7	82.7	63.3	58.1
Paper birch	641.6	648.5	191.5	196.3	268.8	271.5	118.6	120.5	54.4	53.7	8.3	6.5
Exotic	2.2	2.2	-	-	-	-	2.2	2.2	-	-	-	-
Nonstocked	160.4	160.4	20.1	20.1	65.6	65.6	32.8	32.8	33.3	33.3	8.6	8.6
Subtotal	14,759.4	14,726.3	3,828.5	3,820.5	5,150.8	5,139.5	2,950.9	2,947.4	1,920.0	1,913.9	909.2	905.0
Woodland	331.0	331.0	140.8	140.8	165.8	165.8	21.5	21.5	-	-	2.9	2.9
Reserved	260.9	260.9	52.0	52.0	114.6	114.6	30.1	30.1	38.8	38.8	25.4	25.4
Total	15,351.3	15,318.2	4,021.3	4,013.3	5,431.2	5,419.9	3,002.5	2,999.0	1,958.8	1,952.7	937.5	933.3
Nonforest land												
Cropland	12,712.4	12,743.2	748.6	756.2	1,272.3	1,282.3	2,441.0	2,444.5	2,902.6	2,908.7	5,347.9	5,351.5
Pasture and range	2,128.7	2,128.7	209.3	209.3	345.4	345.4	538.7	538.7	712.5	712.5	322.8	322.8
Other	4,640.4	4,642.7	721.0	721.4	876.5	877.8	1,188.0	1,188.0	576.6	576.6	1,278.3	1,278.9
Total	19,481.5	19,514.6	1,678.9	1,686.9	2,494.2	2,505.5	4,167.7	4,171.2	4,191.7	4,197.8	6,949.0	6,953.2
Total land	34,832.8	34,832.8	5,700.2	5,700.2	7,925.4	7,925.4	7,170.2	7,170.2	6,150.5	6,150.5	7,886.5	7,886.5
Water (Bureau of Census)	1,105.0	1,105.0	262.8	262.8	290.3	290.3	114.6	114.6	126.0	126.0	311.3	311.3
Total land and water	35,937.8	35,937.8	5,963.0	5,963.0	8,215.7	8,215.7	7,284.8	7,284.8	6,276.5	6,276.5	8,197.8	8,197.8

Table 2.--Area of timberland by ownership class and Forest Survey Unit, Wisconsin, 1987

(In thousand acres)

Ownership class	All units	Forest survey unit				
		Northeast	Northwest	Central	Southwest	Southeast
National forest	1,242.3	548.8	693.5	-	-	-
Miscellaneous fed.	177.0	3.9	7.3	131.4	29.8	4.6
State	569.5	193.5	177.1	96.6	34.8	67.5
County and municipal	2,178.7	645.6	1,109.7	399.6	10.9	12.9
Indian	354.7	255.5	94.6	4.6	-	-
Forest industry	1,158.8	486.8	528.9	127.6	-	15.5
Farmer	3,496.4	380.5	445.6	994.9	1,248.8	426.6
Misc. private-corp.	663.0	161.9	223.0	129.0	93.0	56.1
Misc. private-indiv.	4,885.9	1,144.0	1,859.8	1,063.7	496.6	321.8
All owners	14,726.3	3,820.5	5,139.5	2,947.4	1,913.9	905.0

Table 3.--Area of timberland by forest type, stand-age class, and Forest Survey Unit, Wisconsin, 1987

(In thousand acres)

ALL UNITS

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	529.8	150.6	71.4	112.5	137.0	47.6	3.3	5.5	1.9	-	-
Red pine	500.4	183.4	107.9	97.3	54.6	21.4	7.3	7.8	17.5	3.2	-
White pine	230.3	37.8	11.2	18.6	23.1	21.6	24.7	27.3	35.9	9.9	20.2
Balsam fir	401.4	75.6	42.2	47.3	47.0	96.6	49.6	13.2	15.9	7.3	6.7
White spruce	61.4	19.8	10.7	13.9	6.5	8.5	2.0	-	-	-	-
Black spruce	277.3	72.1	72.4	36.4	28.3	14.4	14.4	24.9	12.5	-	1.9
Northern white-cedar	380.4	24.7	18.8	8.0	49.2	34.5	39.6	30.8	97.8	31.3	45.7
Tamarack	219.0	70.0	39.2	13.6	21.4	16.5	18.9	15.6	16.5	3.7	3.6
Oak-hickory	2,847.6	489.0	95.6	122.6	335.8	421.2	273.3	281.9	416.9	174.8	236.5
Elm-ash-soft maple	1,224.0	246.6	85.2	117.1	158.1	121.8	130.9	128.3	147.1	49.7	39.2
Maple-basswood	4,017.3	581.0	233.4	259.6	617.2	685.4	482.3	242.4	443.2	216.1	256.7
Aspen	3,226.3	1,194.6	306.6	466.0	693.6	341.5	129.0	56.7	38.3	-	-
Paper birch	648.5	114.6	60.9	95.5	150.2	132.1	77.3	13.8	0.3	3.8	-
Exotic	2.2	2.2	-	-	-	-	-	-	-	-	-
Nonstocked	160.4	160.4	-	-	-	-	-	-	-	-	-
All types	14,726.3	3,422.4	1,155.5	1,408.4	2,322.0	1,963.1	1,252.6	848.2	1,243.8	499.8	610.5

NORTHEAST

Jack pine	76.3	15.1	10.0	20.9	11.4	17.4	1.5	-	-	-	-
Red pine	164.7	38.1	27.0	50.4	25.4	3.3	5.3	3.2	8.8	3.2	-
White pine	82.9	7.1	6.9	6.9	5.4	12.3	1.9	12.4	13.3	3.7	13.0
Balsam fir	177.5	37.3	18.3	25.7	18.4	39.7	15.7	9.9	5.5	3.5	3.5
White spruce	19.8	8.6	-	-	2.7	8.5	-	-	-	-	-
Black spruce	150.2	35.8	39.6	11.1	10.4	10.4	12.6	19.5	8.9	-	1.9
Northern white-cedar	189.8	14.1	13.3	1.7	22.5	13.2	19.1	12.7	51.7	17.7	23.8
Tamarack	60.1	13.0	17.4	1.8	-	6.6	12.7	3.4	3.4	1.8	-
Oak-hickory	143.8	26.0	3.4	3.5	21.4	34.5	15.0	17.6	13.3	5.5	3.6
Elm-ash-soft maple	226.1	36.3	15.7	23.1	28.3	17.5	42.7	21.4	28.5	3.7	8.9
Maple-basswood	1,295.4	123.0	50.4	80.1	231.1	229.2	160.2	70.6	117.6	83.4	149.8
Aspen	1,017.5	430.1	72.1	129.1	193.4	115.0	50.4	12.4	15.0	-	-
Paper birch	196.3	22.2	20.2	14.5	47.8	51.9	31.8	7.6	0.3	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	20.1	20.1	-	-	-	-	-	-	-	-	-
All types	3,820.5	826.8	294.3	368.8	618.2	559.5	368.9	190.7	266.3	122.5	204.5

NORTHWEST

Jack pine	242.6	50.2	33.4	49.5	80.6	21.8	1.8	3.4	1.9	-	-
Red pine	136.8	54.5	10.7	22.9	24.7	10.9	2.0	4.6	6.5	-	-
White pine	34.6	-	-	-	3.1	4.7	11.2	10.4	3.6	1.6	-
Balsam fir	212.0	31.1	21.5	21.6	26.3	56.9	33.9	3.3	10.4	3.8	3.2
White spruce	31.9	3.7	10.7	11.7	3.8	-	2.0	-	-	-	-
Black spruce	112.8	24.4	32.8	25.3	15.5	4.0	1.8	5.4	3.6	-	-
Northern white-cedar	110.6	1.8	5.5	0.7	21.1	4.0	15.0	10.1	27.7	5.5	19.2
Tamarack	111.5	34.6	21.8	7.0	16.8	5.4	1.7	7.7	11.0	1.9	3.6
Oak-hickory	410.9	111.7	11.0	18.0	44.5	105.1	30.8	34.9	35.3	15.0	4.6
Elm-ash-soft maple	412.1	62.3	33.3	36.0	55.8	48.7	44.3	36.2	53.7	18.6	23.2
Maple-basswood	1,487.7	154.9	84.6	91.9	300.8	324.9	218.5	91.8	128.9	45.8	45.6
Aspen	1,498.9	495.7	157.4	229.2	345.2	172.3	66.2	24.0	8.9	-	-
Paper birch	271.5	33.7	25.6	44.3	77.4	52.0	30.9	3.8	-	3.8	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	65.6	65.6	-	-	-	-	-	-	-	-	-
All types	5,139.5	1,124.2	448.3	558.1	1,015.6	810.7	460.1	235.6	291.5	96.0	99.4

(Table 3 continued on next page)

(Table 3 continued)

CENTRAL

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	198.0	80.3	28.0	37.1	42.1	8.4	-	2.1	-	-	-
Red pine	141.6	57.4	54.4	15.9	4.5	7.2	-	-	2.2	-	-
White pine	78.7	9.1	-	11.7	9.1	4.6	11.6	4.5	16.3	4.6	7.2
Balsam fir	11.9	7.2	2.4	-	2.3	-	-	-	-	-	-
White spruce	2.2	2.2	-	-	-	-	-	-	-	-	-
Black spruce	11.6	9.2	-	-	2.4	-	-	-	-	-	-
Northern white-cedar	25.3	-	-	-	-	12.3	2.7	5.3	5.0	-	-
Tamarack	38.2	19.9	-	2.5	2.3	4.5	2.4	4.5	2.1	-	-
Oak-hickory	935.9	185.7	41.2	57.3	138.7	162.8	119.1	110.5	77.4	11.8	31.4
Elm-ash-soft maple	269.8	79.3	2.2	25.2	37.4	23.4	20.8	35.0	35.1	9.0	2.4
Maple-basswood	509.6	130.3	31.3	28.5	45.8	54.9	61.3	39.5	77.9	21.0	19.1
Aspen	569.1	222.4	50.4	84.7	136.2	41.3	4.5	17.9	11.7	-	-
Paper birch	120.5	46.7	11.8	26.4	11.7	12.1	9.4	2.4	-	-	-
Exotic	2.2	2.2	-	-	-	-	-	-	-	-	-
Nonstocked	32.8	32.8	-	-	-	-	-	-	-	-	-
All types	2,947.4	884.7	221.7	289.3	432.5	331.5	231.8	221.7	227.7	46.4	60.1

SOUTHWEST

Jack pine	10.2	5.0	-	2.3	2.9	-	-	-	-	-	-
Red pine	43.1	21.4	15.8	5.9	-	-	-	-	-	-	-
White pine	15.8	15.8	-	-	-	-	-	-	-	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	2.5	2.5	-	-	-	-	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-	-	-
Northern white-cedar	-	-	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-	-	-
Oak-hickory	1,061.5	139.7	32.0	36.2	115.6	92.5	96.9	85.6	236.7	113.4	112.9
Elm-ash-soft maple	115.5	32.0	5.6	5.6	8.7	16.7	8.1	11.3	16.9	10.6	-
Maple-basswood	495.6	129.8	47.0	43.3	29.2	46.5	18.9	17.7	81.4	53.3	28.5
Aspen	82.7	22.9	16.7	10.7	13.8	10.5	5.4	-	2.7	-	-
Paper birch	53.7	8.1	3.3	7.7	13.3	16.1	5.2	-	-	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	33.3	33.3	-	-	-	-	-	-	-	-	-
All types	1,913.9	410.5	120.4	111.7	183.5	182.3	134.5	114.6	337.7	177.3	141.4

SOUTHEAST

Jack pine	2.7	-	-	2.7	-	-	-	-	-	-	-
Red pine	14.2	12.0	-	2.2	-	-	-	-	-	-	-
White pine	18.3	5.8	4.3	-	5.5	-	-	-	2.7	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	5.0	2.8	-	2.2	-	-	-	-	-	-	-
Black spruce	2.7	2.7	-	-	-	-	-	-	-	-	-
Northern white-cedar	54.7	8.8	-	5.6	5.6	5.0	2.8	2.7	13.4	8.1	2.7
Tamarack	9.2	2.5	-	2.3	2.3	-	2.1	-	-	-	-
Oak-hickory	295.5	25.9	8.0	7.6	15.6	26.3	11.5	33.3	54.2	29.1	84.0
Elm-ash-soft maple	200.5	36.7	28.4	27.2	27.9	15.5	15.0	24.4	12.9	7.8	4.7
Maple-basswood	229.0	43.0	20.1	15.8	10.3	29.9	23.4	22.8	37.4	12.6	13.7
Aspen	58.1	23.5	10.0	12.3	5.0	2.4	2.5	2.4	-	-	-
Paper birch	6.5	3.9	-	2.6	-	-	-	-	-	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	8.6	8.6	-	-	-	-	-	-	-	-	-
All types	905.0	176.2	70.8	80.5	72.2	79.1	57.3	85.6	120.6	57.6	105.1

Table 4.--Area of timberland by forest type, site-index class, and Forest Survey Unit, Wisconsin, 1987

(In thousand acres)

Forest type	All classes	Site-index class (feet) 11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+
ALL UNITS										
Jack pine	529.8	-	1.6	8.1	70.3	168.0	198.3	71.7	10.0	1.8
Red pine	500.4	-	-	9.5	8.2	82.8	169.0	163.1	63.1	4.7
White pine	230.3	-	-	6.8	25.4	62.6	72.1	36.8	23.5	3.1
Balsam fir	401.4	3.2	6.7	43.5	106.6	109.9	100.4	21.0	8.3	1.8
White spruce	61.4	-	-	2.8	11.8	12.1	10.7	24.0	-	-
Black spruce	277.3	-	73.6	97.4	67.1	23.9	11.8	3.5	-	-
Northern white-cedar	380.4	6.9	119.2	100.1	75.9	43.6	30.0	2.7	2.0	-
Tamarack	219.0	-	19.7	45.3	52.0	50.1	42.0	5.9	4.0	-
Oak-hickory	2,847.6	-	-	127.1	391.9	791.9	742.2	510.0	221.1	63.4
Elm-ash-soft maple	1,224.0	-	7.2	74.7	189.6	347.0	299.7	184.5	100.3	21.0
Maple-basswood	4,017.3	-	-	40.3	253.8	894.1	1,323.2	1,000.6	418.3	87.0
Aspen	3,226.3	-	-	18.7	161.0	497.2	946.0	1,085.8	447.6	70.0
Paper birch	648.5	-	-	8.0	49.2	155.1	215.1	143.4	67.3	10.4
Exotic	2.2	-	-	-	-	-	-	2.2	-	-
Nonstocked	160.4	-	3.8	17.4	28.0	46.8	31.2	25.8	4.7	2.7
All types	14,726.3	10.1	231.8	599.7	1,490.8	3,285.1	4,191.7	3,281.0	1,370.2	265.9
NORTHEAST										
Jack pine	76.3	-	1.6	1.5	8.3	21.7	23.5	16.5	3.2	-
Red pine	164.7	-	-	-	3.6	31.1	56.0	54.1	19.9	-
White pine	82.9	-	-	1.8	10.4	20.1	27.1	12.7	10.8	-
Balsam fir	177.5	-	5.0	25.5	41.6	47.2	46.2	10.2	1.8	-
White spruce	19.8	-	-	-	5.4	8.3	-	6.1	-	-
Black spruce	150.2	-	39.0	47.4	37.9	15.4	7.0	3.5	-	-
Northern white-cedar	189.8	3.4	67.2	59.2	25.7	23.1	9.2	-	2.0	-
Tamarack	60.1	-	6.8	17.2	10.4	24.1	1.6	-	-	-
Oak-hickory	143.8	-	-	-	4.9	32.4	38.4	39.8	22.8	5.5
Elm-ash-soft maple	226.1	-	-	23.2	38.1	74.1	55.4	17.7	17.6	-
Maple-basswood	1,295.4	-	-	11.5	74.9	258.5	451.2	366.0	116.3	17.0
Aspen	1,017.5	-	-	9.3	57.9	177.0	302.4	340.2	118.2	12.5
Paper birch	196.3	-	-	-	12.8	45.5	79.2	51.1	7.7	-
Exotic	-	-	-	-	-	-	-	-	-	-
Nonstocked	20.1	-	2.0	1.8	5.4	5.6	1.9	3.4	-	-
All types	3,820.5	3.4	121.6	198.4	337.3	784.1	1,099.1	921.3	320.3	35.0
NORTHWEST										
Jack pine	242.6	-	-	1.9	35.8	74.5	103.5	20.6	4.5	1.8
Red pine	136.8	-	-	2.1	2.1	31.5	58.2	34.6	8.3	-
White pine	34.6	-	-	-	3.3	19.7	8.5	-	3.1	-
Balsam fir	212.0	3.2	1.7	18.0	57.9	60.3	51.8	10.8	6.5	1.8
White spruce	31.9	-	-	-	1.7	3.8	10.7	15.7	-	-
Black spruce	112.8	-	34.6	47.6	21.9	3.9	4.8	-	-	-
Northern white-cedar	110.6	3.5	34.0	14.0	37.1	8.9	13.1	-	-	-
Tamarack	111.5	-	12.9	23.7	30.6	14.5	24.5	3.6	1.7	-
Oak-hickory	410.9	-	-	12.4	41.4	135.1	114.1	90.7	17.2	-
Elm-ash-soft maple	412.1	-	1.8	33.0	98.6	136.0	77.9	43.4	21.4	-
Maple-basswood	1,487.7	-	-	12.6	88.9	348.4	531.5	359.8	130.2	16.3
Aspen	1,498.9	-	-	4.3	54.0	188.8	435.1	545.9	246.0	24.8
Paper birch	271.5	-	-	5.7	20.6	70.2	92.1	52.8	28.1	2.0
Exotic	-	-	-	-	-	-	-	-	-	-
Nonstocked	65.6	-	1.8	5.6	14.5	18.5	14.4	8.9	1.9	-
All types	5,139.5	6.7	86.8	180.9	508.4	1,114.1	1,540.2	1,186.8	468.9	46.7

(Table 4 continued on next page)

(Table 4 continued)

CENTRAL

Forest type	All classes	Site-index class (feet) 11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+
Jack pine	198.0	-	-	4.7	23.7	61.4	71.3	34.6	2.3	-
Red pine	141.6	-	-	7.4	2.5	20.2	37.6	48.1	21.1	4.7
White pine	78.7	-	-	2.3	11.7	16.5	27.5	13.8	6.9	-
Balsam fir	11.9	-	-	-	7.1	2.4	2.4	-	-	-
White spruce	2.2	-	-	-	2.2	-	-	-	-	-
Black spruce	11.6	-	-	2.4	4.6	4.6	-	-	-	-
Northern white-cedar	25.3	-	7.3	10.3	5.1	-	2.6	-	-	-
Tamarack	38.2	-	-	4.4	11.0	11.5	6.7	2.3	2.3	-
Oak-hickory	935.9	-	-	54.5	131.8	276.6	267.1	123.6	71.1	11.2
Elm-ash-soft maple	269.8	-	-	2.2	23.0	78.1	94.0	47.0	25.5	-
Maple-basswood	509.6	-	-	4.9	26.8	118.9	177.1	107.4	60.5	14.0
Aspen	569.1	-	-	-	35.0	121.4	185.5	144.6	59.9	22.7
Paper birch	120.5	-	-	2.3	13.9	25.7	28.9	26.2	21.1	2.4
Exotic	2.2	-	-	-	-	-	-	2.2	-	-
Nonstocked	32.8	-	-	4.5	2.3	11.9	9.2	4.9	-	-
All types	2,947.4	-	7.3	99.9	300.7	749.2	909.9	554.7	270.7	55.0

SOUTHWEST

Jack pine	10.2	-	-	-	2.5	7.7	-	-	-	-
Red pine	43.1	-	-	-	-	-	15.0	14.3	13.8	-
White pine	15.8	-	-	-	-	3.1	6.5	3.1	-	3.1
Balsam fir	-	-	-	-	-	-	-	-	-	-
White spruce	2.5	-	-	-	2.5	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-	-
Northern white-cedar	-	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-	-
Oak-hickory	1,061.5	-	-	35.6	148.4	271.6	257.2	217.2	89.8	41.7
Elm-ash-soft maple	115.5	-	-	5.2	5.5	24.4	36.5	22.3	12.9	8.7
Maple-basswood	495.6	-	-	8.9	51.2	112.9	103.6	116.0	80.7	22.3
Aspen	82.7	-	-	2.6	11.1	2.7	7.9	31.9	18.8	7.7
Paper birch	53.7	-	-	-	-	13.7	10.3	13.3	10.4	6.0
Exotic	-	-	-	-	-	-	-	-	-	-
Nonstocked	33.3	-	-	5.5	2.5	5.5	5.7	8.6	2.8	2.7
All types	1,913.9	-	-	57.8	223.7	441.6	442.7	426.7	229.2	92.2

SOUTHEAST

Jack pine	2.7	-	-	-	-	2.7	-	-	-	-
Red pine	14.2	-	-	-	-	-	2.2	12.0	-	-
White pine	18.3	-	-	2.7	-	3.2	2.5	7.2	2.7	-
Balsam fir	-	-	-	-	-	-	-	-	-	-
White spruce	5.0	-	-	2.8	-	-	-	2.2	-	-
Black spruce	2.7	-	-	-	2.7	-	-	-	-	-
Northern white-cedar	54.7	-	10.7	16.6	8.0	11.6	5.1	2.7	-	-
Tamarack	9.2	-	-	-	-	-	9.2	-	-	-
Oak-hickory	295.5	-	-	24.6	65.4	76.2	65.4	38.7	20.2	5.0
Elm-ash-soft maple	200.5	-	5.4	11.1	24.4	34.4	35.9	54.1	22.9	12.3
Maple-basswood	229.0	-	-	2.4	12.0	55.4	59.8	51.4	30.6	17.4
Aspen	58.1	-	-	2.5	3.0	7.3	15.1	23.2	4.7	2.3
Paper birch	6.5	-	-	-	1.9	-	4.6	-	-	-
Exotic	-	-	-	-	-	-	-	-	-	-
Nonstocked	8.6	-	-	-	3.3	5.3	-	-	-	-
All types	905.0	-	16.1	62.7	120.7	196.1	199.8	191.5	81.1	37.0

Table 5.--Area of timberland by forest type, stand-size class, and Forest Survey Unit, Wisconsin, 1987

(In thousand acres)

Forest type	All classes	Stand size class			
		Sawtimber	Poletimber	Sapling and seedling	Nonstocked
ALL UNITS					
Jack pine	529.8	71.0	270.6	188.2	-
Red pine	500.4	156.7	200.5	143.2	-
White pine	230.3	155.4	45.1	29.8	-
Balsam fir	401.4	112.8	176.7	111.9	-
White spruce	61.4	23.0	20.2	18.2	-
Black spruce	277.3	5.5	82.7	189.1	-
Northern white-cedar	380.4	118.2	212.5	49.7	-
Tamarack	219.0	15.2	87.5	116.3	-
Oak-hickory	2,847.6	1,353.8	834.5	659.3	-
Elm-ash-soft maple	1,224.0	405.6	515.0	303.4	-
Maple-basswood	4,017.3	1,549.4	1,760.0	707.9	-
Aspen	3,226.3	350.6	1,510.9	1,364.8	-
Paper birch	648.5	80.1	420.9	147.5	-
Exotic	2.2	-	-	2.2	-
Nonstocked	160.4	-	-	-	160.4
All types	14,726.3	4,397.3	6,137.1	4,031.5	160.4
NORTHEAST					
Jack pine	76.3	20.3	34.3	21.7	-
Red pine	164.7	79.5	58.6	26.6	-
White pine	82.9	59.9	15.9	7.1	-
Balsam fir	177.5	33.1	87.2	57.2	-
White spruce	19.8	9.3	5.5	5.0	-
Black spruce	150.2	3.7	54.6	91.9	-
Northern white-cedar	189.8	45.7	116.4	27.7	-
Tamarack	60.1	1.6	26.3	32.2	-
Oak-hickory	143.8	56.9	57.3	29.6	-
Elm-ash-soft maple	226.1	66.8	108.6	50.7	-
Maple-basswood	1,295.4	516.4	633.6	145.4	-
Aspen	1,017.5	110.0	451.6	455.9	-
Paper birch	196.3	22.9	142.0	31.4	-
Exotic	-	-	-	-	-
Nonstocked	20.1	-	-	-	20.1
All types	3,820.5	1,026.1	1,791.9	982.4	20.1
NORTHWEST					
Jack pine	242.6	30.4	139.2	73.0	-
Red pine	136.8	53.3	29.4	54.1	-
White pine	34.6	29.6	5.0	-	-
Balsam fir	212.0	77.4	89.5	45.1	-
White spruce	31.9	13.7	12.5	5.7	-
Black spruce	112.8	1.8	28.1	82.9	-
Northern white-cedar	110.6	45.7	56.9	8.0	-
Tamarack	111.5	9.3	40.5	61.7	-
Oak-hickory	410.9	107.4	176.2	127.3	-
Elm-ash-soft maple	412.1	104.7	211.2	96.2	-
Maple-basswood	1,487.7	454.0	821.1	212.6	-
Aspen	1,498.9	152.8	744.0	602.1	-
Paper birch	271.5	26.9	196.5	48.1	-
Exotic	-	-	-	-	-
Nonstocked	65.6	-	-	-	65.6
All types	5,139.5	1,107.0	2,550.1	1,416.8	65.6

(Table 5 continued on next page)

(Table 5 continued)

Forest type	All classes	Stand size class			
		Sawtimber	Poletimber	Sapling and seedling	Nonstocked
CENTRAL					
Jack pine	198.0	15.1	94.4	88.5	-
Red pine	141.6	18.4	79.0	44.2	-
White pine	78.7	60.4	11.5	6.8	-
Balsam fir	11.9	2.3	-	9.6	-
White spruce	2.2	-	-	2.2	-
Black spruce	11.6	-	-	11.6	-
Northern white-cedar	25.3	2.4	20.5	2.4	-
Tamarack	38.2	2.2	16.1	19.9	-
Oak-hickory	935.9	311.5	381.9	242.5	-
Elm-ash-soft maple	269.8	93.4	94.9	81.5	-
Maple-basswood	509.6	226.1	131.7	151.8	-
Aspen	569.1	56.7	255.7	256.7	-
Paper birch	120.5	11.8	52.7	56.0	-
Exotic	2.2	-	-	2.2	-
Nonstocked	32.8	-	-	-	32.8
All types	2,947.4	800.3	1,138.4	975.9	32.8
SOUTHWEST					
Jack pine	10.2	5.2	-	5.0	-
Red pine	43.1	3.3	27.5	12.3	-
White pine	15.8	-	3.1	12.7	-
Balsam fir	-	-	-	-	-
White spruce	2.5	-	-	2.5	-
Black spruce	-	-	-	-	-
Northern white-cedar	-	-	-	-	-
Tamarack	-	-	-	-	-
Oak-hickory	1,061.5	658.6	187.2	215.7	-
Elm-ash-soft maple	115.5	63.5	17.2	34.8	-
Maple-basswood	495.6	222.4	118.1	155.1	-
Aspen	82.7	21.3	37.8	23.6	-
Paper birch	53.7	18.5	27.1	8.1	-
Exotic	-	-	-	-	-
Nonstocked	33.3	-	-	-	33.3
All types	1,913.9	992.8	418.0	469.8	33.3
SOUTHEAST					
Jack pine	2.7	-	2.7	-	-
Red pine	14.2	2.2	6.0	6.0	-
White pine	18.3	5.5	9.6	3.2	-
Balsam fir	-	-	-	-	-
White spruce	5.0	-	2.2	2.8	-
Black spruce	2.7	-	-	2.7	-
Northern white-cedar	54.7	24.4	18.7	11.6	-
Tamarack	9.2	2.1	4.6	2.5	-
Oak-hickory	295.5	219.4	31.9	44.2	-
Elm-ash-soft maple	200.5	77.2	83.1	40.2	-
Maple-basswood	229.0	130.5	55.5	43.0	-
Aspen	58.1	9.8	21.8	26.5	-
Paper birch	6.5	-	2.6	3.9	-
Exotic	-	-	-	-	-
Nonstocked	8.6	-	-	-	8.6
All types	905.0	471.1	238.7	186.6	8.6

Table 6.--Net volume of growing stock on timberland by forest type, stand-age class, and Forest Survey Unit, Wisconsin, 1987

(In thousand cubic feet)

ALL UNITS

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	476,867	52,308	53,059	133,161	178,350	53,571	3,468	2,303	647	-	-
Red pine	913,459	148,176	256,712	233,813	133,915	53,194	13,651	19,717	45,164	9,117	-
White pine	386,116	23,068	14,636	21,423	43,773	33,261	49,537	70,936	62,747	20,802	45,933
Balsam fir	428,018	40,070	30,786	46,285	69,777	133,251	57,520	15,939	19,674	7,556	7,160
White spruce	123,741	11,143	25,458	44,020	12,751	23,631	6,738	-	-	-	-
Black spruce	133,866	17,873	21,025	11,553	17,556	10,086	11,393	31,109	13,271	-	-
Northern white-cedar	511,648	14,382	10,635	8,111	59,332	52,206	61,150	43,907	145,539	45,808	70,578
Tamarack	128,268	20,143	13,186	9,674	22,072	13,497	19,249	14,862	10,750	3,330	1,505
Oak-hickory	2,922,708	154,582	64,598	120,766	419,094	618,307	334,490	384,139	536,147	191,256	99,329
Elm-ash-soft maple	1,207,267	96,993	69,553	123,551	184,435	142,713	165,411	174,615	172,722	45,370	31,904
Maple-basswood	5,515,107	272,459	191,032	340,838	945,905	1,094,978	830,637	387,151	704,427	328,208	419,472
Aspen	2,901,603	408,518	250,603	589,629	1,054,408	419,986	99,353	48,664	30,442	-	-
Paper birch	829,867	53,121	54,416	128,007	219,888	213,712	135,260	22,975	858	1,630	-
Exotic	1,011	1,011	-	-	-	-	-	-	-	-	-
Nonstocked	18,692	18,692	-	-	-	-	-	-	-	-	-
All types	16,498,238	1,332,539	1,055,699	1,810,831	3,361,256	2,862,393	1,787,857	1,216,317	1,742,388	653,077	675,881

NORTHEAST

Jack pine	69,781	3,774	8,451	28,735	10,882	16,503	1,436	-	-	-	-
Red pine	328,568	34,371	63,597	115,111	60,253	4,360	11,993	7,346	22,420	9,117	-
White pine	156,973	7,258	10,411	8,541	9,174	18,482	496	30,140	31,600	6,810	34,061
Balsam fir	192,347	18,701	9,015	26,107	30,490	63,677	15,678	12,890	7,039	4,251	4,499
White spruce	35,552	8,431	-	-	3,490	23,631	-	-	-	-	-
Black spruce	87,270	9,032	14,350	3,121	8,361	6,796	10,280	25,989	9,341	-	-
Northern white-cedar	273,317	7,309	7,807	3,121	24,105	22,261	33,905	22,365	84,636	28,442	39,366
Tamarack	36,022	3,234	7,381	718	-	4,237	13,428	3,350	2,683	991	-
Oak-hickory	188,920	12,405	2,666	4,266	25,987	56,934	22,994	33,685	18,058	10,085	1,840
Elm-ash-soft maple	234,405	16,397	11,653	25,624	31,905	22,873	53,162	28,205	30,886	3,452	10,248
Maple-basswood	1,962,500	57,633	47,576	102,403	371,692	355,567	279,241	118,211	206,931	151,503	271,743
Aspen	870,164	155,411	68,434	165,139	302,569	121,966	35,651	12,968	8,026	-	-
Paper birch	296,748	12,371	21,306	20,813	74,152	86,267	66,046	14,935	858	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	884	884	-	-	-	-	-	-	-	-	-
All types	4,733,451	347,211	272,647	503,699	953,060	803,554	544,310	310,084	422,478	214,651	361,757

NORTHWEST

Jack pine	248,454	21,330	25,199	59,987	110,797	26,961	2,032	1,501	647	-	-
Red pine	228,255	21,433	23,498	54,791	65,598	32,396	1,658	12,371	16,510	-	-
White pine	78,131	-	-	-	6,862	7,525	25,529	29,371	6,383	2,461	-
Balsam fir	227,254	12,574	21,433	20,178	37,671	69,574	41,842	3,049	12,635	3,305	2,661
White spruce	85,025	2,096	25,458	41,472	9,261	-	6,738	-	-	-	-
Black spruce	42,085	5,926	6,675	8,432	7,599	3,290	1,113	5,120	3,930	-	-
Northern white-cedar	120,875	130	2,828	33	23,870	4,617	17,522	10,088	31,949	5,457	24,381
Tamarack	63,994	12,157	5,805	5,046	16,690	5,806	490	8,124	6,032	2,339	1,505
Oak-hickory	429,217	29,370	5,692	18,647	65,798	175,739	44,336	45,342	36,550	7,743	-
Elm-ash-soft maple	394,128	20,994	26,479	40,824	61,757	59,816	57,422	43,438	49,798	17,180	16,420
Maple-basswood	2,170,374	90,164	70,896	124,389	458,631	540,048	375,661	161,759	199,257	72,815	76,754
Aspen	1,373,729	165,189	113,348	288,035	523,114	220,601	44,889	12,786	5,767	-	-
Paper birch	351,290	21,209	21,691	51,883	119,713	80,320	49,103	5,741	-	1,630	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	7,521	7,521	-	-	-	-	-	-	-	-	-
All types	5,820,332	412,425	349,002	713,717	1,507,361	1,226,693	668,335	338,690	369,458	112,930	121,721

(Table 6 continued on next page)

(Table 6 continued)

CENTRAL

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	149,095	27,204	19,409	38,151	53,422	10,107	-	802	-	-	-
Red pine	251,702	54,431	124,819	41,716	8,064	16,438	-	-	6,234	-	-
White pine	125,723	8,620	-	12,882	16,252	7,254	23,512	11,425	22,375	11,531	11,872
Balsam fir	8,417	6,463	338	-	1,616	-	-	-	-	-	-
White spruce	616	616	-	-	-	-	-	-	-	-	-
Black spruce	3,341	1,745	-	-	1,596	-	-	-	-	-	-
Northern white-cedar	37,293	-	-	-	-	17,267	5,363	7,304	7,359	-	-
Tamarack	22,337	4,300	-	1,761	3,369	3,454	4,030	3,388	2,035	-	-
Oak-hickory	877,057	51,737	20,990	49,373	156,582	219,000	137,582	143,964	91,791	6,038	-
Elm-ash-soft maple	273,526	29,872	350	24,924	50,521	28,904	23,018	56,304	48,865	8,486	2,282
Maple-basswood	609,503	54,962	23,335	39,318	62,256	91,121	101,446	57,061	124,052	27,908	28,044
Aspen	516,691	65,360	45,899	109,686	204,310	52,926	5,566	19,042	13,902	-	-
Paper birch	106,752	15,200	8,911	36,779	9,201	19,774	14,588	2,299	-	-	-
Exotic	1,011	1,011	-	-	-	-	-	-	-	-	-
Nonstocked	5,280	5,280	-	-	-	-	-	-	-	-	-
All types	2,988,344	326,801	244,051	354,590	567,189	466,245	315,105	301,589	316,613	53,963	42,198

SOUTHWEST

Jack pine	5,960	-	-	2,711	3,249	-	-	-	-	-	-
Red pine	80,936	21,941	44,798	14,197	-	-	-	-	-	-	-
White pine	4,155	4,155	-	-	-	-	-	-	-	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	-	-	-	-	-	-	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-	-	-
Northern white-cedar	-	-	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-	-	-
Oak-hickory	1,130,327	56,884	29,923	39,207	155,774	135,485	113,452	122,330	305,162	132,767	39,343
Elm-ash-soft maple	124,219	13,046	5,600	8,391	14,609	15,127	9,454	19,543	26,203	12,246	-
Maple-basswood	481,974	46,420	29,542	54,991	41,785	62,000	24,481	16,461	118,209	60,419	27,666
Aspen	91,718	12,070	14,800	12,225	18,812	19,717	11,347	-	2,747	-	-
Paper birch	70,081	4,027	2,508	13,850	16,822	27,351	5,523	-	-	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	4,267	4,267	-	-	-	-	-	-	-	-	-
All types	1,993,637	162,810	127,171	145,572	251,051	259,680	164,257	158,334	452,321	205,432	67,009

SOUTHEAST

Jack pine	3,577	-	-	3,577	-	-	-	-	-	-	-
Red pine	23,998	16,000	-	7,998	-	-	-	-	-	-	-
White pine	21,134	3,035	4,225	-	11,485	-	-	-	2,389	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	2,548	-	-	2,548	-	-	-	-	-	-	-
Black spruce	1,170	1,170	-	-	-	-	-	-	-	-	-
Northern white-cedar	80,163	6,943	-	4,957	11,357	8,061	4,360	4,150	21,595	11,909	6,831
Tamarack	5,915	452	-	2,149	2,013	-	1,301	-	-	-	-
Oak-hickory	297,187	4,186	5,327	9,273	14,953	31,149	16,126	38,818	84,586	34,623	58,146
Elm-ash-soft maple	180,989	16,684	25,471	23,788	25,643	15,993	22,355	27,125	16,970	4,006	2,954
Maple-basswood	290,756	23,280	19,683	19,737	11,541	46,242	49,808	33,659	55,978	15,563	15,265
Aspen	49,301	10,488	8,122	14,544	5,603	4,776	1,900	3,868	-	-	-
Paper birch	4,996	314	-	4,682	-	-	-	-	-	-	-
Exotic	-	-	-	-	-	-	-	-	-	-	-
Nonstocked	740	740	-	-	-	-	-	-	-	-	-
All types	962,474	83,292	62,828	93,253	82,595	106,221	95,850	107,620	181,518	66,101	83,196

Table 7.--Net volume of sawtimber on timberland by forest type, stand-age class, and Forest Survey Unit, Wisconsin, 1987

(In thousand board feet) 1/

ALL UNITS

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	894,081	58,288	48,131	216,210	387,378	155,832	15,176	11,139	1,927	-	-
Red pine	2,183,757	106,254	268,187	664,853	502,388	224,864	65,335	95,154	213,866	42,856	-
White pine	1,564,709	36,144	39,362	63,558	151,678	118,675	205,226	322,863	285,175	95,116	246,912
Balsam fir	980,204	74,326	57,328	89,285	146,949	342,139	130,502	32,524	58,393	24,561	24,197
White spruce	349,796	19,849	71,371	133,399	31,543	60,227	33,407	-	-	-	-
Black spruce	186,487	19,723	25,589	9,905	8,953	8,859	11,597	76,130	25,731	-	-
Northern white-cedar	1,000,013	15,072	17,862	11,277	106,811	85,440	75,636	71,057	253,679	128,314	234,865
Tamarack	173,826	31,922	9,652	3,390	33,318	9,992	30,624	26,957	18,699	4,988	4,284
Oak-hickory	8,642,347	389,453	130,793	205,959	806,959	1,449,407	971,491	1,325,524	2,124,532	802,690	435,539
Elm-ash-soft maple	2,952,890	186,781	93,284	208,393	381,075	306,902	399,289	531,243	580,622	146,742	118,559
Maple-basswood	14,504,660	564,524	355,670	578,487	1,624,961	2,358,534	2,116,537	1,220,760	2,649,116	1,252,663	1,783,408
Aspen	4,599,970	605,867	325,430	857,660	1,532,541	843,321	210,463	134,947	89,741	-	-
Paper birch	1,381,801	71,991	62,092	178,341	314,087	396,515	295,094	56,245	2,190	5,246	-
Nonstocked	36,323	36,323	-	-	-	-	-	-	-	-	-
All types	39,450,864	2,216,517	1,504,751	3,220,717	6,028,641	6,360,707	4,560,377	3,904,543	6,303,671	2,503,176	2,847,764

NORTHEAST

Jack pine	152,830	5,061	5,681	58,254	31,127	45,630	7,077	-	-	-	-
Red pine	942,141	41,727	79,865	355,253	204,545	15,709	56,740	37,035	108,411	42,856	-
White pine	684,857	32,235	32,377	25,244	29,997	67,702	2,704	137,823	143,666	26,040	187,069
Balsam fir	396,358	27,642	13,296	48,347	66,979	142,462	24,986	23,094	19,457	14,432	15,663
White spruce	90,142	17,543	-	-	12,372	60,227	-	-	-	-	-
Black spruce	133,212	11,355	15,699	927	6,710	6,812	11,045	64,626	16,038	-	-
Northern white-cedar	457,121	11,460	14,103	5,762	32,233	39,428	27,827	29,862	104,907	61,818	129,721
Tamarack	41,962	5,305	4,679	668	-	5,198	23,453	542	582	1,535	-
Oak-hickory	481,755	33,075	6,759	11,109	38,605	97,646	59,508	126,786	60,619	37,016	10,632
Elm-ash-soft maple	530,636	29,783	13,408	40,037	59,384	48,407	120,186	66,470	99,978	12,353	40,630
Maple-basswood	5,179,088	99,109	70,330	161,250	594,732	685,698	669,743	384,199	780,358	588,678	1,144,991
Aspen	1,408,354	208,252	98,272	279,990	449,742	244,442	70,951	35,462	21,243	-	-
Paper birch	503,721	15,011	32,829	33,908	104,948	150,543	124,549	39,743	2,190	-	-
Nonstocked	2,155	2,155	-	-	-	-	-	-	-	-	-
All types	11,004,332	539,713	387,298	1,020,749	1,631,374	1,609,904	1,198,769	945,642	1,357,449	784,728	1,528,706

NORTHWEST

Jack pine	426,022	22,439	24,245	66,246	219,029	77,531	8,099	6,506	1,927	-	-
Red pine	712,381	21,152	15,133	143,543	261,353	133,634	8,595	58,119	70,852	-	-
White pine	329,995	-	-	-	17,131	24,722	102,638	139,924	31,739	13,841	-
Balsam fir	564,509	31,860	43,064	40,938	76,425	199,677	105,516	9,430	38,936	10,129	8,534
White spruce	256,685	2,306	71,371	130,430	19,171	-	33,407	-	-	-	-
Black spruce	51,968	7,061	9,890	8,978	2,243	2,047	552	11,504	9,693	-	-
Northern white-cedar	315,019	586	3,759	-	48,044	9,488	38,370	22,240	88,162	23,289	81,081
Tamarack	101,225	18,930	4,973	2,722	28,307	3,111	-	20,651	14,794	3,453	4,284
Oak-hickory	911,229	65,355	3,531	32,616	76,997	335,484	91,978	132,227	141,440	31,601	-
Elm-ash-soft maple	804,413	35,425	20,976	64,499	103,825	110,608	138,047	108,045	128,597	40,098	54,293
Maple-basswood	4,969,979	150,121	96,525	177,768	786,006	1,151,314	885,825	455,002	688,946	262,336	316,136
Aspen	2,172,061	292,523	129,657	389,987	778,079	440,142	79,724	41,794	20,155	-	-
Paper birch	493,873	23,829	18,604	56,866	146,600	129,940	102,537	10,251	-	5,246	-
Nonstocked	9,917	9,917	-	-	-	-	-	-	-	-	-
All types	12,119,276	681,504	441,728	1,114,593	2,563,210	2,617,698	1,595,288	1,015,693	1,235,241	389,993	464,328

(Table 7 continued on next page)

(Table 7 continued)

CENTRAL

Forest type	All ages	Stand-age class(years) 1-20	21-30	31-40	41-50	51-60	61-70	71-80	81-100	101-120	121+
Jack pine	288,206	30,788	18,205	79,184	122,725	32,671	-	4,633	-	-	-
Red pine	376,564	34,761	119,243	75,946	36,490	75,521	-	-	34,603	-	-
White pine	482,421	3,322	-	38,314	57,476	26,251	99,884	45,116	96,980	55,235	59,843
Balsam fir	19,337	14,828	968	-	3,545	-	-	-	-	-	-
White spruce	-	-	-	-	-	-	-	-	-	-	-
Black spruce	1,307	1,307	-	-	-	-	-	-	-	-	-
Northern white-cedar	54,678	-	-	-	-	16,738	7,200	16,015	14,725	-	-
Tamarack	22,691	6,761	-	-	2,163	1,683	2,997	5,764	3,323	-	-
Oak-hickory	2,279,325	117,289	46,061	89,929	269,579	487,423	399,859	487,034	363,731	18,420	-
Elm-ash-soft maple	682,432	44,686	-	46,870	81,514	57,145	43,786	188,586	171,323	37,504	11,018
Maple-basswood	1,806,907	113,971	59,685	82,651	129,687	208,082	295,919	204,359	479,118	108,194	125,241
Aspen	708,366	72,363	52,520	152,179	262,655	64,434	18,464	50,001	35,750	-	-
Paper birch	195,211	21,154	5,167	54,993	15,529	38,419	53,698	6,251	-	-	-
Nonstocked	9,558	9,558	-	-	-	-	-	-	-	-	-
All types	6,927,003	470,784	301,849	620,066	981,363	1,008,367	921,807	1,007,759	1,199,553	219,353	196,102

SOUTHWEST

Jack pine	27,023	-	-	12,526	14,497	-	-	-	-	-	-
Red pine	115,767	2,866	53,946	58,955	-	-	-	-	-	-	-
White pine	-	-	-	-	-	-	-	-	-	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	-	-	-	-	-	-	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-	-	-
Northern white-cedar	-	-	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-	-	-
Oak-hickory	3,832,873	161,811	64,673	58,812	384,329	426,160	356,579	434,629	1,220,295	563,156	162,429
Elm-ash-soft maple	422,897	38,064	10,232	17,851	53,205	45,935	34,446	82,386	100,644	40,134	-
Maple-basswood	1,579,917	135,995	82,252	119,676	85,094	180,386	85,667	53,018	481,152	228,877	127,800
Aspen	217,497	16,958	33,433	23,053	23,347	73,746	34,367	-	12,593	-	-
Paper birch	179,096	11,997	5,492	22,674	47,010	77,613	14,310	-	-	-	-
Nonstocked	12,581	12,581	-	-	-	-	-	-	-	-	-
All types	6,387,651	380,272	250,028	313,547	607,482	803,840	525,369	570,033	1,814,684	832,167	290,229

SOUTHEAST

Jack pine	-	-	-	-	-	-	-	-	-	-	-
Red pine	36,904	5,748	-	31,156	-	-	-	-	-	-	-
White pine	67,436	587	6,985	-	47,074	-	-	-	12,790	-	-
Balsam fir	-	-	-	-	-	-	-	-	-	-	-
White spruce	2,969	-	-	2,969	-	-	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-	-	-
Northern white-cedar	173,195	3,026	-	5,515	26,534	19,786	2,239	2,940	45,885	43,207	24,063
Tamarack	7,948	926	-	-	2,848	-	4,174	-	-	-	-
Oak-hickory	1,137,165	11,923	9,769	13,493	37,449	102,694	63,567	144,848	338,447	152,497	262,478
Elm-ash-soft maple	512,512	38,823	48,668	39,136	83,147	44,807	62,824	85,756	80,080	16,653	12,618
Maple-basswood	968,769	65,328	46,878	37,142	29,442	133,054	179,383	124,182	219,542	64,578	69,240
Aspen	93,692	15,771	11,548	12,451	18,718	20,557	6,957	7,690	-	-	-
Paper birch	9,900	-	-	9,900	-	-	-	-	-	-	-
Nonstocked	2,112	2,112	-	-	-	-	-	-	-	-	-
All types	3,012,602	144,244	123,848	151,762	245,212	320,898	319,144	365,416	696,744	276,935	368,399

1/ International 1/4-inch rule

Table 8.--Growing-stock volume and periodic growth on timberland by forest type, component of growth, and Forest Survey Unit, Wisconsin, 1983-1987

(In thousand cubic feet)

ALL UNITS

Forest type	1983 growing stock volume 1/	Components: Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Jack pine	446,132	64,460	32,777	11,432	-17,640	91,029	-46,545	-13,749	476,867
Red pine	735,172	142,870	51,973	25,436	-7,951	212,328	-32,901	-1,140	913,459
White pine	356,675	49,926	4,579	10,010	-3,956	60,559	-28,339	-2,779	386,116
Balsam fir	397,258	70,033	13,454	7,171	-14,789	75,869	-28,241	-16,868	428,018
White spruce	97,257	26,010	3,112	1,226	-2,275	28,073	-1,589	-	123,741
Black spruce	119,378	15,064	7,217	3,036	-9,928	15,389	-901	-	133,866
Northern white-cedar	468,162	40,806	19,600	14,342	-14,646	60,102	-16,616	-	511,648
Tamarack	116,405	15,455	4,335	642	-5,150	15,282	-1,677	-1,742	128,268
Oak-hickory	3,012,870	274,481	42,188	43,661	-81,225	279,105	-354,860	-14,407	2,922,708
Elm-ash-soft maple	1,154,619	132,053	34,926	15,466	-31,922	150,523	-78,293	-19,582	1,207,267
Maple-basswood	4,984,022	669,448	101,425	86,565	-132,182	725,256	-186,149	-8,022	5,515,107
Aspen	2,826,339	454,179	123,891	99,810	-112,615	565,265	-457,245	-32,756	2,901,603
Paper birch	716,255	102,767	26,986	14,453	-17,517	126,689	-10,822	-2,255	829,867
Exotic	529	134	290	58	-	482	-	-	1,011
Nonstocked	17,274	2,683	-	128	-121	2,690	-1,272	-	18,692
All types	15,448,347	2,060,369	466,753	333,436	-451,917	2,408,641	-1,245,450	-113,300	16,498,238

NORTHEAST

Forest type	1983 growing stock volume	Survivor growth	Ingrowth	Other growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Jack pine	75,124	9,338	3,773	2,381	-3,290	12,202	-12,441	-5,104	69,781
Red pine	262,262	51,441	14,954	6,296	-3,773	68,918	-1,472	-1,140	328,568
White pine	152,842	19,158	2,113	4,868	-2,714	23,425	-19,294	-	156,973
Balsam fir	184,727	28,410	6,420	2,618	-5,697	31,751	-14,229	-9,902	192,347
White spruce	26,704	7,864	1,594	347	-475	9,330	-482	-	35,552
Black spruce	79,271	9,324	3,523	2,165	-6,276	8,736	-737	-	87,270
Northern white-cedar	252,458	21,366	12,473	6,381	-8,852	31,368	-10,509	-	273,317
Tamarack	32,550	3,609	2,282	129	-924	5,096	-270	-1,354	36,022
Oak-hickory	201,222	21,164	1,916	4,211	-7,858	19,433	-25,284	-6,451	188,920
Elm-ash-soft maple	234,000	27,886	8,998	4,248	-7,169	33,963	-24,147	-9,411	234,405
Maple-basswood	1,822,033	233,871	28,126	42,813	-48,438	256,372	-115,905	-	1,962,500
Aspen	893,697	133,633	39,151	41,447	-34,653	179,578	-192,924	-10,187	870,164
Paper birch	256,419	35,357	7,884	6,871	-6,602	43,510	-3,181	-	296,748
Exotic	-	-	-	-	-	-	-	-	-
Nonstocked	732	152	-	-	-	152	-	-	884
All types	4,474,041	602,573	133,207	124,775	-136,721	723,834	-420,875	-43,549	4,733,451

NORTHWEST

Forest type	1983 growing stock volume	Survivor growth	Ingrowth	Other growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Jack pine	215,576	37,914	18,293	5,757	-8,849	53,115	-16,108	-4,129	248,454
Red pine	173,884	40,404	16,015	3,482	-2,266	57,635	-3,264	-	228,255
White pine	70,904	11,674	645	309	-716	11,912	-1,906	-2,779	78,131
Balsam fir	205,362	40,427	6,762	4,468	-8,787	42,870	-14,012	-6,966	227,254
White spruce	67,843	17,747	1,255	766	-1,800	17,968	-786	-	85,025
Black spruce	36,652	5,196	3,018	826	-3,443	5,597	-164	-	42,085
Northern white-cedar	111,579	12,176	3,336	3,250	-3,653	15,109	-5,813	-	120,875
Tamarack	57,196	8,991	2,053	446	-3,754	7,736	-938	-	63,994
Oak-hickory	413,258	56,673	13,435	8,848	-16,264	62,692	-42,033	-4,700	429,217
Elm-ash-soft maple	384,331	49,394	12,268	7,166	-16,426	52,402	-35,840	-6,765	394,128
Maple-basswood	1,898,617	295,546	52,896	29,049	-54,571	322,920	-51,163	-	2,170,374
Aspen	1,305,016	238,890	62,004	49,056	-60,761	289,189	-212,208	-8,268	1,373,729
Paper birch	299,165	47,611	16,150	5,781	-9,776	59,766	-7,641	-	351,290
Exotic	-	-	-	-	-	-	-	-	-
Nonstocked	6,125	1,506	-	23	-	1,529	-133	-	7,521
All types	5,245,508	864,149	208,130	119,227	-191,066	1,000,440	-392,009	-33,607	5,820,332

(Table 8 continued on next page)

(Table 8 continued)

CENTRAL

Forest type	1983 growing stock volume 1/	Components: Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Jack pine	142,641	16,395	9,958	2,161	-4,770	23,744	-13,555	-3,735	149,095
Red pine	217,333	36,195	14,145	9,763	-1,115	58,988	-24,619	-	251,702
White pine	112,743	14,123	965	1,733	-526	16,295	-3,315	-	125,723
Balsam fir	7,169	1,196	272	85	-305	1,248	-	-	8,417
White spruce	146	129	263	78	-	470	-	-	616
Black spruce	2,475	354	676	45	-209	866	-	-	3,341
Northern white-cedar	32,533	2,468	878	2,919	-1,211	5,054	-294	-	37,293
Tamarack	20,697	2,294	-	29	-150	2,173	-145	-388	22,337
Oak-hickory	913,469	84,219	10,149	11,821	-26,100	80,089	-115,185	-1,316	877,057
Elm-ash-soft maple	250,648	27,530	10,377	1,671	-4,505	35,073	-10,839	-1,356	273,526
Maple-basswood	555,058	64,996	6,496	6,460	-9,885	68,067	-13,622	-	609,503
Aspen	495,008	64,971	20,284	8,715	-13,251	80,719	-51,594	-7,442	516,691
Paper birch	91,415	12,637	1,529	1,712	-541	15,337	-	-	106,752
Exotic	529	134	290	58	-	482	-	-	1,011
Nonstocked	5,212	593	-	16	-121	488	-420	-	5,280
All types	2,847,076	328,234	76,282	47,266	-62,689	389,093	-233,588	-14,237	2,988,344

SOTHWEST

Jack pine	10,461	457	-	995	-731	721	-4,441	-781	5,960
Red pine	66,863	11,011	3,542	2,957	-797	16,713	-2,640	-	80,936
White pine	5,174	948	474	1,383	-	2,805	-3,824	-	4,155
Balsam fir	-	-	-	-	-	-	-	-	-
White spruce	-	-	-	-	-	-	-	-	-
Black spruce	-	-	-	-	-	-	-	-	-
Northern white-cedar	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-
Oak-hickory	1,173,608	91,638	12,797	11,484	-25,470	90,449	-131,790	-1,940	1,130,327
Elm-ash-soft maple	115,416	11,494	1,166	1,887	-1,685	12,862	-2,009	-2,050	124,219
Maple-basswood	438,298	45,406	7,786	1,352	-7,149	47,395	-1,696	-2,023	481,974
Aspen	85,904	11,026	-	209	-2,452	8,783	-	-2,969	91,718
Paper birch	63,487	6,708	1,423	89	-598	7,622	-	-1,028	70,081
Exotic	-	-	-	-	-	-	-	-	-
Nonstocked	4,577	320	-	89	-	409	-719	-	4,267
All types	1,963,788	179,008	27,188	20,445	-38,882	187,759	-147,119	-10,791	1,993,637

SOTHEAST

Jack pine	2,330	356	753	138	-	1,247	-	-	3,577
Red pine	14,830	3,819	3,317	2,938	-	10,074	-906	-	23,998
White pine	15,012	4,023	382	1,717	-	6,122	-	-	21,134
Balsam fir	-	-	-	-	-	-	-	-	-
White spruce	2,564	270	-	35	-	305	-321	-	2,548
Black spruce	980	190	-	-	-	190	-	-	1,170
Northern white-cedar	71,592	4,796	2,913	1,792	-930	8,571	-	-	80,163
Tamarack	5,962	561	-	38	-322	277	-324	-	5,915
Oak-hickory	311,313	20,787	3,891	7,297	-5,533	26,442	-40,568	-	297,187
Elm-ash-soft maple	170,224	15,749	2,117	494	-2,137	16,223	-5,458	-	180,989
Maple-basswood	270,016	29,629	6,121	6,891	-12,139	30,502	-3,763	-5,999	290,756
Aspen	46,714	5,659	2,452	383	-1,498	6,996	-519	-3,890	49,301
Paper birch	5,769	454	-	-	-	454	-	-1,227	4,996
Exotic	-	-	-	-	-	-	-	-	-
Nonstocked	628	112	-	-	-	112	-	-	740
All types	917,934	86,405	21,946	21,723	-22,559	107,515	-51,859	-11,116	962,474

1/ Figures have been adjusted from those published after the 1983 survey to conform to changes in survey definitions and procedures

2/ Includes growth on ingrowth, mortality and removals.

Table 9.--Growing-stock volume and periodic growth on timberland by species group, and component of growth, and Forest Survey Unit, Wisconsin, 1983-1987

(In thousand cubic feet)

ALL UNITS

Species group	1983 growing stock volume 1/	Components							1987 growing stock volume
		Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	
Softwoods									
Jack pine	533,134	71,812	24,593	15,390	-23,640	88,155	-63,821	-12,469	544,999
Red pine	773,252	145,907	59,022	33,965	-1,035	237,859	-80,929	-2,852	927,330
White pine	560,709	88,645	3,902	10,981	-4,372	99,156	-35,661	-3,464	620,740
White spruce	196,912	67,269	6,185	6,053	-2,106	77,401	-11,103	-1,591	261,619
Black spruce	119,539	13,401	5,907	2,684	-12,890	9,102	-4,327	-1,124	123,190
Balsam fir	546,635	118,523	20,451	14,537	-26,651	126,860	-27,774	-9,292	636,429
Hemlock	277,776	31,194	547	3,710	-2,553	32,898	-10,810	-608	299,256
Tamarack	136,648	12,613	5,132	1,630	-8,061	11,314	-1,269	-1,727	144,966
Eastern redcedar	3,354	659	372	56	-	1,087	-	-14	4,427
Northern white-cedar	472,514	44,192	17,662	8,288	-2,071	68,071	-7,653	-3,536	529,396
Other softwoods	3,673	999	290	204	-121	1,372	-	-42	5,003
Total	3,624,146	595,214	144,063	97,498	-83,500	753,275	-243,347	-36,719	4,097,355
Hardwoods									
Select white oak	634,266	46,121	2,596	4,017	-871	51,863	-43,647	-3,179	639,303
Select red oak	1,431,209	148,635	12,442	16,640	-42,564	135,153	-109,883	-8,019	1,448,460
Other red oak	627,280	52,443	1,893	4,560	-27,884	31,012	-47,298	-3,532	607,462
Select hickory	117,940	8,603	3,092	714	-2,136	10,273	-3,437	-395	124,381
Other hickory	75,618	6,782	3,244	1,247	-2,700	8,573	-875	-383	82,933
Basswood	825,011	121,402	6,569	12,308	-18,513	121,766	-29,652	-2,043	915,082
Beech	29,039	2,200	546	328	-724	2,350	-1,988	-320	29,081
Yellow birch	204,483	18,802	1,852	3,432	-10,151	13,935	-11,437	-395	206,586
Hard maple	1,481,166	201,385	43,495	32,313	-24,426	252,767	-88,766	-2,855	1,642,312
Soft maple	1,221,591	174,756	61,340	17,530	-24,289	229,337	-44,035	-8,768	1,398,125
Elm	428,274	49,005	3,831	12,762	-28,705	36,893	-80,764	-3,166	381,237
Black ash	417,941	37,406	25,724	5,664	-15,006	53,788	-14,152	-5,344	452,233
White & green ash	320,178	37,108	3,374	3,965	-5,054	39,393	-10,092	-2,607	346,872
Cottonwood	31,091	2,999	-	209	-460	2,748	-1,318	-424	32,097
Willow	24,150	2,858	-	49	-257	2,650	-	-384	26,416
Hackberry	2,134	343	-	25	-235	133	-	-26	2,241
Balsam poplar	38,513	6,480	500	598	-3,719	3,859	-1,303	-678	40,391
Bigtooth aspen	692,432	118,385	10,213	20,866	-32,769	116,695	-92,197	-5,822	711,108
Quaking aspen	1,929,216	284,458	82,428	79,207	-104,618	341,475	-354,314	-19,215	1,897,162
Paper birch	1,026,288	116,362	47,744	15,990	-19,293	160,803	-56,005	-7,072	1,124,014
River birch	9,690	1,555	-	1,257	-	2,812	-1,352	-142	11,008
Black cherry	168,293	18,533	9,521	1,875	-1,743	28,186	-4,553	-1,305	190,621
Black walnut	23,089	2,076	-	150	-400	1,826	-836	-19	24,060
Butternut	39,626	3,880	836	212	-	4,928	-776	-222	43,556
Other hardwoods	25,683	2,578	1,450	20	-1,900	2,148	-3,423	-266	24,142
Total	11,824,201	1,465,155	322,690	235,938	-368,417	1,655,366	-1,002,103	-76,581	12,400,883
All species	15,448,347	2,060,369	466,753	333,436	-451,917	2,408,641	-1,245,450	-113,300	16,498,238

(Table 9 continued on next page)

(Table 9 continued)

NORTHEAST

Species group	1983 growing stock volume 1/	Components							1987 growing stock volume
		Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	
Softwoods									
Jack pine	93,933	11,501	4,149	2,438	-4,896	13,192	-13,590	-4,528	89,007
Red pine	277,104	52,282	15,882	9,655	-222	77,597	-18,513	-1,962	334,226
White pine	208,459	30,355	1,514	3,948	-1,336	34,481	-11,583	-1,006	230,351
White spruce	72,838	24,556	3,457	2,558	-162	30,409	-5,705	-950	96,592
Black spruce	74,284	7,081	3,052	1,673	-7,900	3,906	-2,715	-875	74,600
Balsam fir	233,321	43,965	6,988	6,767	-11,753	45,967	-18,293	-5,240	255,755
Hemlock	185,917	19,729	547	2,485	-1,964	20,797	-9,321	-425	196,968
Tamarack	40,850	3,592	1,687	440	-1,913	3,806	-407	-964	43,285
Eastern redcedar	-	-	-	-	-	-	-	-	-
Northern white-cedar	249,457	22,927	12,955	3,666	-1,144	38,404	-2,941	-2,127	282,793
Other softwoods	262	116	-	45	-121	40	-	-	302
Total	1,436,425	216,104	50,231	33,675	-31,411	268,599	-83,068	-18,077	1,603,879
Hardwoods									
Select white oak	10,314	869	-	108	-	977	-1,049	-322	9,920
Select red oak	207,091	24,593	2,008	2,794	-8,823	20,572	-10,075	-2,895	214,693
Other red oak	41,188	5,095	227	568	-1,936	3,954	-1,504	-1,304	42,334
Select hickory	-	-	-	-	-	-	-	-	-
Other hickory	8,879	916	-	113	-	1,029	-	-212	9,696
Basswood	266,152	39,865	1,598	3,231	-3,319	41,375	-8,925	-332	298,270
Beech	14,667	1,167	546	226	-314	1,625	-1,730	-29	14,533
Yellow birch	87,994	7,178	948	2,141	-4,582	5,685	-7,466	-189	86,024
Hard maple	640,163	82,104	14,121	17,090	-9,774	103,541	-45,090	-579	698,035
Soft maple	302,541	43,837	10,651	6,818	-6,647	54,659	-14,244	-3,401	339,555
Elm	114,838	11,237	1,516	4,604	-10,109	7,248	-30,636	-1,340	90,110
Black ash	78,429	7,531	7,743	2,507	-3,686	14,095	-4,045	-1,887	86,592
White & green ash	71,454	9,197	1,250	1,283	-875	10,855	-3,999	-903	77,407
Cottonwood	3,839	546	-	27	-209	364	-167	-150	3,886
Willow	2,114	341	-	9	-	350	-	-126	2,338
Hackberry	-	-	-	-	-	-	-	-	-
Balsam poplar	24,302	3,637	317	340	-2,747	1,547	-525	-474	24,850
Bigtooth aspen	160,638	26,409	2,417	9,256	-9,336	28,746	-34,902	-1,765	152,717
Quaking aspen	594,941	78,569	25,189	32,051	-34,256	101,553	-149,108	-6,472	540,914
Paper birch	358,734	37,631	13,232	7,496	-7,489	50,870	-24,342	-2,832	382,430
River birch	-	-	-	-	-	-	-	-	-
Black cherry	44,580	5,274	1,213	402	-1,098	5,791	-	-251	50,120
Black walnut	-	-	-	-	-	-	-	-	-
Butternut	4,654	473	-	30	-	503	-	-9	5,148
Other hardwoods	104	-	-	6	-110	-104	-	-	-
Total	3,037,616	386,469	82,976	91,100	-105,310	455,235	-337,807	-25,472	3,129,572
All species	4,474,041	602,573	133,207	124,775	-136,721	723,834	-420,875	-43,549	4,733,451

(Table 9 continued on next page)

(Table 9 continued)

NORTHWEST

Species group	1983 growing stock volume 1/	Components: Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Softwoods									
Jack pine	233,754	38,707	13,046	7,998	-10,998	48,753	-24,278	-4,063	254,166
Red pine	176,723	40,198	17,530	6,357	-232	63,853	-18,079	-645	221,852
White pine	152,354	28,304	451	1,113	-1,576	28,292	-7,087	-2,089	171,470
White spruce	118,145	41,021	2,465	3,388	-1,944	44,930	-5,398	-641	157,036
Black spruce	39,323	5,727	2,179	812	-4,781	3,937	-258	-249	42,753
Balsam fir	295,133	70,718	12,299	7,157	-14,072	76,102	-9,240	-3,952	358,043
Hemlock	63,505	8,038	-	430	-589	7,879	-518	-126	70,740
Tamarack	58,621	6,196	2,812	875	-5,082	4,801	-675	-320	62,427
Eastern redcedar	-	-	-	-	-	-	-	-	-
Northern white-cedar	116,551	12,967	2,027	1,667	-209	16,452	-3,615	-671	128,717
Other softwoods	319	105	-	-	-	105	-	-42	382
Total	1,254,428	251,981	52,809	29,797	-39,483	295,104	-69,148	-12,798	1,467,586
Hardwoods									
Select white oak	74,697	8,666	1,208	518	-325	10,067	-2,701	-1,239	80,824
Select red oak	387,993	56,123	7,461	4,809	-16,417	51,976	-15,070	-2,571	422,328
Other red oak	39,988	5,594	251	359	-1,969	4,235	-1,250	-470	42,503
Select hickory	-	-	-	-	-	-	-	-	-
Other hickory	10,146	1,040	-	146	-590	596	-	-37	10,705
Basswood	335,389	55,671	1,522	5,865	-8,219	54,839	-7,982	-723	381,523
Beech	-	-	-	-	-	-	-	-	-
Yellow birch	84,029	8,754	904	989	-4,858	5,789	-2,629	-117	87,072
Hard maple	541,264	89,958	27,725	11,297	-10,768	118,212	-22,076	-265	637,135
Soft maple	471,870	79,112	41,403	6,647	-12,433	114,729	-11,317	-2,413	572,869
Elm	139,607	18,063	533	3,667	-10,863	11,400	-21,835	-791	128,381
Black ash	223,250	20,208	11,938	2,389	-9,619	24,916	-5,830	-2,673	239,663
White & green ash	84,909	12,222	414	1,297	-1,613	12,320	-1,617	-317	95,295
Cottonwood	-	-	-	-	-	-	-	-	-
Willow	154	23	-	-	-	23	-	-	177
Hackberry	-	-	-	-	-	-	-	-	-
Balsam poplar	9,424	2,128	183	254	-721	1,844	-778	-52	10,438
Bigtooth aspen	267,280	51,468	4,691	8,326	-14,708	49,777	-41,619	-1,475	273,963
Quaking aspen	866,367	145,030	34,885	35,684	-50,067	165,532	-162,402	-5,752	863,745
Paper birch	431,742	54,837	20,508	6,926	-8,235	74,036	-25,240	-1,856	478,682
River birch	-	-	-	-	-	-	-	-	-
Black cherry	19,263	2,844	1,695	242	-178	4,603	-382	-49	23,435
Black walnut	-	-	-	-	-	-	-	-	-
Butternut	3,495	406	-	-	-	406	-	-9	3,892
Other hardwoods	213	21	-	15	-	36	-133	-	116
Total	3,991,080	612,168	155,321	89,430	-151,583	705,336	-322,861	-20,809	4,352,746
All species	5,245,508	864,149	208,130	119,227	-191,066	1,000,440	-392,009	-33,607	5,820,332

(Table 9 continued on next page)

(Table 9 continued)

CENTRAL

Species group	1983 growing stock volume 1/	Components: Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	1987 growing stock volume
Softwoods									
Jack pine	195,297	20,944	7,398	3,754	-6,756	25,340	-22,982	-3,322	194,333
Red pine	231,628	38,285	17,998	10,649	-370	66,562	-33,709	-245	264,236
White pine	169,294	24,176	1,081	2,986	-1,460	26,783	-11,195	-202	184,680
White spruce	1,155	526	263	78	-	867	-	-	2,022
Black spruce	4,158	381	676	190	-209	1,038	-1,354	-	3,842
Balsam fir	15,621	3,501	856	543	-686	4,214	-241	-34	19,560
Hemlock	25,952	3,168	-	768	-	3,936	-831	-15	29,042
Tamarack	25,616	2,182	-	116	-150	2,148	-187	-326	27,251
Eastern redcedar	491	89	-	-	-	89	-	-10	570
Northern white-cedar	31,646	2,468	1,289	1,855	-523	5,089	-	-29	36,706
Other softwoods	2,566	445	290	159	-	894	-	-	3,460
Total	703,424	96,165	29,851	21,098	-10,154	136,960	-70,499	-4,183	765,702
Hardwoods									
Select white oak	159,337	11,852	647	1,151	-	13,650	-14,992	-466	157,529
Select red oak	337,029	30,950	589	3,328	-7,639	27,228	-33,358	-803	330,096
Other red oak	315,405	26,724	974	1,732	-14,411	15,019	-19,142	-1,150	310,132
Select hickory	5,830	467	-	44	-241	270	-	-	6,100
Other hickory	12,839	987	-	730	-1,120	597	-222	-	13,214
Basswood	74,250	8,753	832	1,036	-1,115	9,506	-4,990	-52	78,714
Beech	1,117	66	-	86	-247	-95	-	-	1,022
Yellow birch	24,402	2,273	-	242	-711	1,804	-1,160	-24	25,022
Hard maple	113,434	12,146	532	1,841	-980	13,539	-10,297	-34	116,642
Soft maple	295,476	36,452	6,195	3,199	-3,902	41,944	-11,103	-1,495	324,822
Elm	44,146	5,271	490	1,180	-1,132	5,809	-9,730	-104	40,121
Black ash	66,067	5,538	4,479	618	-1,166	9,469	-3,286	-420	71,830
White & green ash	38,942	4,271	544	495	-365	4,945	-1,607	-105	42,175
Cottonwood	2,233	139	-	10	-	149	-	-9	2,373
Willow	2,937	348	-	32	-257	123	-	-18	3,042
Hackberry	-	-	-	-	-	-	-	-	-
Balsam poplar	247	-	-	4	-251	-247	-	-	-
Bigtooth aspen	152,431	23,945	2,055	1,894	-4,031	23,863	-10,259	-1,120	164,915
Quaking aspen	345,271	45,576	17,646	7,692	-12,700	58,214	-37,493	-3,560	362,432
Paper birch	122,049	12,750	8,992	977	-1,983	20,736	-3,976	-551	138,258
River birch	3,158	759	-	-	-	759	-	-13	3,904
Black cherry	17,085	1,884	1,531	147	-	3,562	-414	-91	20,142
Black walnut	409	20	-	26	-	46	-206	-	249
Butternut	5,127	521	-	57	-	578	-216	-	5,489
Other hardwoods	4,431	377	925	-353	-284	665	-638	-39	4,419
Total	2,143,652	232,069	46,431	26,168	-52,535	252,133	-163,089	-10,054	2,222,642
All species	2,847,076	328,234	76,282	47,266	-62,689	389,093	-233,588	-14,237	2,988,344

(Table 9 continued on next page)

(Table 9 continued)

SOUTHWEST

Species group	1983 growing stock volume 1/	Components							1987 growing stock volume
		Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	
Softwoods									
Jack pine	7,427	399	-	657	-990	66	-1,712	-556	5,225
Red pine	68,505	10,706	3,542	3,697	-211	17,734	-8,577	-	77,662
White pine	14,324	2,074	474	1,713	-	4,261	-5,149	-113	13,323
White spruce	322	87	-	-	-	87	-	-	409
Black spruce	927	59	-	-	-	59	-	-	986
Balsam fir	197	13	-	-	-	13	-	-	210
Hemlock	-	-	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-	-	-
Eastern redcedar	1,738	357	-	-	-	357	-	-4	2,091
Northern white-cedar	-	-	-	-	-	-	-	-	-
Other softwoods	-	-	-	-	-	-	-	-	-
Total	93,440	13,695	4,016	6,067	-1,201	22,577	-15,438	-673	99,906
Hardwoods									
Select white oak	279,251	18,159	741	1,070	-546	19,424	-17,903	-690	280,082
Select red oak	418,796	31,580	-	3,052	-7,109	27,523	-44,311	-1,424	400,584
Other red oak	179,055	11,388	441	993	-7,790	5,032	-20,977	-323	162,787
Select hickory	75,574	5,934	2,364	238	-961	7,575	-2,222	-241	80,686
Other hickory	36,173	3,344	3,244	139	-777	5,950	-453	-97	41,573
Basswood	120,462	12,343	1,359	893	-3,535	11,060	-6,160	-369	124,993
Beech	-	-	-	-	-	-	-	-	-
Yellow birch	1,208	112	-	-	-	112	-	-11	1,309
Hard maple	118,905	11,143	-	629	-1,205	10,567	-7,566	-400	121,506
Soft maple	95,826	10,037	1,267	439	-394	11,349	-4,269	-977	101,929
Elm	87,446	10,464	824	1,846	-4,171	8,963	-10,590	-509	85,310
Black ash	13,502	1,289	-	30	-300	1,019	-395	-187	13,939
White & green ash	46,985	4,178	1,166	227	-493	5,078	-1,462	-373	50,228
Cottonwood	19,984	1,860	-	121	-251	1,730	-811	-239	20,664
Willow	7,602	1,053	-	-	-	1,053	-	-142	8,513
Hackberry	1,421	266	-	25	-235	56	-	-26	1,451
Balsam poplar	1,186	164	-	-	-	164	-	-	1,350
Bigtooth aspen	93,513	12,832	1,050	738	-3,687	10,933	-3,816	-1,133	99,497
Quaking aspen	77,068	9,681	853	1,458	-3,223	8,769	-4,072	-1,431	80,334
Paper birch	91,481	8,798	5,012	405	-1,356	12,859	-1,810	-881	101,649
River birch	6,532	796	-	1,257	-	2,053	-1,352	-129	7,104
Black cherry	47,158	4,957	3,490	432	-292	8,587	-1,812	-211	53,722
Black walnut	16,805	1,600	-	70	-400	1,270	-495	-7	17,573
Butternut	23,340	2,270	836	98	-	3,204	-313	-128	26,103
Other hardwoods	11,075	1,065	525	218	-956	852	-892	-190	10,845
Total	1,870,348	165,313	23,172	14,378	-37,681	165,182	-131,681	-10,118	1,893,731
All species	1,963,788	179,008	27,188	20,445	-38,882	187,759	-147,119	-10,791	1,993,637

(Table 9 continued on next page)

(Table 9 continued)

SOUTHEAST

Species group	1983 growing stock volume 1/	Components							1987 growing stock volume
		Survivor growth	Ingrowth	Other 2/ growth	Mortality	Net growth	Removals	Other removals	
Softwoods									
Jack pine	2,723	261	-	543	-	804	-1,259	-	2,268
Red pine	19,292	4,436	4,070	3,607	-	12,113	-2,051	-	29,354
White pine	16,278	3,736	382	1,221	-	5,339	-647	-54	20,916
White spruce	4,452	1,079	-	29	-	1,108	-	-	5,560
Black spruce	847	153	-	9	-	162	-	-	1,009
Balsam fir	2,363	326	308	70	-140	564	-	-66	2,861
Hemlock	2,402	259	-	27	-	286	-140	-42	2,506
Tamarack	11,561	643	633	199	-916	559	-	-117	12,003
Eastern redcedar	1,125	213	372	56	-	641	-	-	1,766
Northern white-cedar	74,860	5,830	1,391	1,100	-195	8,126	-1,097	-709	81,180
Other softwoods	526	333	-	-	-	333	-	-	859
Total	136,429	17,269	7,156	6,861	-1,251	30,035	-5,194	-988	160,282
Hardwoods									
Select white oak	110,667	6,575	-	1,170	-	7,745	-7,002	-462	110,948
Select red oak	80,300	5,389	2,384	2,657	-2,576	7,854	-7,069	-326	80,759
Other red oak	51,644	3,642	-	908	-1,778	2,772	-4,425	-285	49,706
Select hickory	36,536	2,202	728	432	-934	2,428	-1,215	-154	37,595
Other hickory	7,581	495	-	119	-213	401	-200	-37	7,745
Basswood	28,758	4,770	1,258	1,283	-2,325	4,986	-1,595	-567	31,582
Beech	13,255	967	-	16	-163	820	-258	-291	13,526
Yellow birch	6,850	485	-	60	-	545	-182	-54	7,159
Hard maple	67,400	6,034	1,117	1,456	-1,699	6,908	-3,737	-1,577	68,994
Soft maple	55,878	5,318	1,824	427	-913	6,656	-3,102	-482	58,950
Elm	42,237	3,970	468	1,465	-2,430	3,473	-7,973	-422	37,315
Black ash	36,693	2,840	1,564	120	-235	4,289	-596	-177	40,209
White & green ash	77,888	7,240	-	663	-1,708	6,195	-1,407	-909	81,767
Cottonwood	5,035	454	-	51	-	505	-340	-26	5,174
Willow	11,343	1,093	-	8	-	1,101	-	-98	12,346
Hackberry	713	77	-	-	-	77	-	-	790
Balsam poplar	3,354	551	-	-	-	551	-	-152	3,753
Bigtooth aspen	18,570	3,731	-	652	-1,007	3,376	-1,601	-329	20,016
Quaking aspen	45,569	5,602	3,855	2,322	-4,372	7,407	-1,239	-2,000	49,737
Paper birch	22,282	2,346	-	186	-230	2,302	-637	-952	22,995
River birch	-	-	-	-	-	-	-	-	-
Black cherry	40,207	3,574	1,592	652	-175	5,643	-1,945	-703	43,202
Black walnut	5,875	456	-	54	-	510	-135	-12	6,238
Butternut	3,010	210	-	27	-	237	-247	-76	2,924
Other hardwoods	9,860	1,115	-	134	-550	699	-1,760	-37	8,762
Total	781,505	69,136	14,790	14,862	-21,308	77,480	-46,665	-10,128	802,192
All species	917,934	86,405	21,946	21,723	-22,559	107,515	-51,859	-11,116	962,474

1/ Figures have been adjusted from those published after the 1983 survey to conform to changes in survey definitions and procedures.

2/ Includes growth on ingrowth, mortality and removals.

Table 10.--Sawtimber volume and periodic growth on timberland by forest type, and component of growth, Wisconsin, 1983-1987

(In thousand board feet) 1/

Forest type	1983 2/ sawtimber volume	Components							1987 sawtimber volume
		Survivor growth	Ingrowth	Other 3/ growth	Mortality	Net growth	Removals	Other removals	
Jack pine	830,785	95,830	163,391	53,994	-39,866	273,349	-182,766	-27,287	894,081
Red pine	1,561,875	253,882	358,428	54,102	-15,268	651,144	-29,262	-	2,183,757
White pine	1,396,385	189,335	65,515	48,535	-13,094	290,291	-113,181	-8,786	1,564,709
Balsam fir	806,809	138,037	137,010	45,488	-24,707	295,828	-90,521	-31,912	980,204
White spruce	220,767	56,993	59,722	14,818	-1,450	130,083	-1,054	-	349,796
Black spruce	154,019	20,841	14,606	3,492	-4,957	33,982	-1,514	-	186,487
Northern white-cedar	867,033	69,777	93,477	35,593	-19,423	179,424	-46,444	-	1,000,013
Tamarack	125,386	18,984	32,786	4,501	-3,609	52,662	-2,521	-1,701	173,826
Oak-hickory	8,689,989	672,941	619,652	222,366	-171,088	1,343,871	-1,356,108	-35,405	8,642,347
Elm-ash-soft maple	2,712,910	245,993	297,090	72,589	-88,773	526,899	-238,726	-48,193	2,952,890
Maple-basswood	12,423,149	1,364,719	1,260,912	322,443	-334,751	2,613,323	-505,939	-25,873	14,504,660
Aspen	4,027,697	576,808	929,843	471,849	-188,264	1,790,236	-1,166,080	-51,883	4,599,970
Paper birch	1,046,425	152,966	204,666	50,792	-29,979	378,445	-38,053	-5,016	1,381,801
Nonstocked	30,663	3,465	5,348	2,947	-	11,760	-6,100	-	36,323
All types	34,893,892	3,860,571	4,242,446	1,403,509	-935,229	8,571,297	-3,778,269	-236,056	39,450,864

1/ International 1/4 inch rule

2/ Figures have been adjusted from those publiched after the 1983 survey to conform to changes in survey definitions and procedures.

3/ Includes growth on ingrowth, mortality and removals.

Table 11.--Sawtimber volume and periodic growth on timberland by species group, and component of growth, Wisconsin, 1983-1987

(In thousand board feet) 1/

Species group	1983 2/ sawtimber volume	Components							1987 sawtimber volume
		Survivor growth	Ingrowth	Other 3/ growth	Mortality	Net growth	Removals	Other removals	
Softwoods									
Jack pine	1,071,691	114,054	197,791	73,404	-61,426	323,823	-206,144	-24,655	1,164,715
Red pine	1,995,540	291,096	378,669	85,784	-2,555	752,994	-240,516	-7,579	2,500,439
White pine	2,621,232	407,249	64,512	63,080	-24,392	510,449	-191,448	-15,191	2,925,042
White spruce	602,447	187,522	138,421	50,035	-3,023	372,955	-43,566	-5,593	926,243
Black spruce	97,029	11,227	11,868	3,578	-12,531	14,142	-3,973	-1,249	105,949
Balsam fir	994,391	222,632	191,744	56,292	-39,524	431,144	-46,510	-15,056	1,363,969
Hemlock	1,108,989	103,765	11,744	14,363	-10,996	118,876	-40,675	-2,134	1,185,056
Tamarack	181,540	17,806	24,284	3,776	-5,094	40,772	-4,005	-1,800	216,507
Eastern redcedar	4,005	439	946	117	-	1,502	-	-56	5,451
Northern white-cedar	1,098,281	97,250	104,330	27,967	-5,624	223,923	-31,517	-9,352	1,281,335
Other softwoods	7,647	1,140	2,003	131	-	3,274	-	-231	10,690
Total	9,782,792	1,454,180	1,126,312	378,527	-165,165	2,793,854	-808,354	-82,896	11,685,396
Hardwoods									
Select white oak	2,227,057	126,184	83,549	21,794	-2,724	228,803	-192,880	-10,733	2,252,247
Select red oak	4,595,396	423,265	315,835	97,990	-91,508	745,582	-508,325	-22,654	4,809,999
Other red oak	1,840,438	137,983	110,985	25,856	-54,375	220,449	-215,199	-10,242	1,835,446
Select hickory	283,107	14,601	17,090	5,122	-5,524	31,289	-16,247	-757	297,392
Other hickory	83,309	5,022	4,986	1,689	-	11,697	-3,260	-184	91,562
Basswood	1,978,335	234,636	302,118	62,137	-47,564	551,327	-93,539	-5,281	2,430,842
Beech	114,805	7,795	6,562	1,321	-3,139	12,539	-9,162	-1,337	116,845
Yellow birch	549,733	38,541	22,901	9,977	-30,595	40,824	-28,800	-928	560,829
Hard maple	3,369,100	345,357	283,308	116,486	-58,314	686,837	-272,140	-8,361	3,775,436
Soft maple	1,856,874	154,997	359,231	36,556	-35,068	515,716	-91,448	-17,858	2,263,284
Elm	1,172,160	101,002	78,582	58,092	-102,785	134,891	-247,891	-8,489	1,050,671
Black ash	544,167	28,298	118,694	16,038	-22,129	140,901	-35,783	-6,967	642,318
White & green ash	820,250	63,565	110,226	17,691	-11,296	180,186	-37,097	-8,048	955,291
Cottonwood	120,618	9,204	5,661	1,305	-995	15,175	-4,410	-1,515	129,868
Willow	81,779	7,744	2,690	472	-1,100	9,806	-	-1,208	90,377
Hackberry	5,989	678	-	109	-950	-163	-	-63	5,763
Balsam poplar	95,682	13,885	14,620	4,136	-10,067	22,574	-4,570	-1,978	111,708
Bigtooth aspen	1,401,901	205,220	280,000	115,513	-77,475	523,258	-272,566	-12,880	1,639,713
Quaking aspen	2,632,252	359,871	660,842	364,731	-182,661	1,202,783	-839,751	-24,154	2,971,130
Paper birch	794,774	89,042	252,614	46,900	-25,295	363,261	-66,528	-5,418	1,086,089
River birch	22,683	2,135	2,582	6,502	-	11,219	-6,365	-238	27,299
Black cherry	269,470	19,574	50,226	7,011	-	76,811	-10,137	-2,773	333,371
Black walnut	83,844	5,994	9,037	3,229	-2,445	15,815	-3,636	-109	95,914
Butternut	124,846	8,888	14,898	3,001	-	26,787	-4,329	-562	146,742
Other hardwoods	42,531	2,910	8,897	1,324	-4,055	9,076	-5,852	-423	45,332
Total	25,111,100	2,406,391	3,116,134	1,024,982	-770,064	5,777,443	-2,969,915	-153,160	27,765,468
All species	34,893,892	3,860,571	4,242,446	1,403,509	-935,229	8,571,297	-3,778,269	-236,056	39,450,864

1/ International 1/4 inch rule.

2/ Figures have been adjusted from those published after the 1983 survey to conform to changes in survey definitions and procedures.

3/ Includes growth on ingrowth, mortality and removals.

Table 12.--Net volume of growing stock on timberland by species group and forest type, Wisconsin, 1987 and component of growth, Wisconsin, 1983-1987

(In thousand cubic feet)

Species group	All types	Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	544,999	389,454	22,881	10,952	594	-	347	496
Red pine	927,330	28,406	754,568	43,528	2,810	656	4,552	382
White pine	620,740	9,082	52,921	242,849	11,849	2,605	4,377	7,825
White spruce	261,619	-	4,026	5,002	35,013	106,438	977	7,011
Black spruce	123,190	241	2,181	3,151	17,691	279	56,759	13,801
Balsam fir	636,429	123	4,660	6,417	214,199	3,808	17,756	41,680
Hemlock	299,256	-	1,162	2,695	6,502	123	2,531	12,834
Tamarack	144,966	145	-	832	4,187	-	16,576	14,318
Eastern redcedar	4,427	229	-	-	-	-	-	-
Northern white-cedar	529,396	-	762	2,155	42,284	1,165	4,452	338,851
Other softwoods	5,003	-	2,422	1,099	-	-	-	-
Total	4,097,355	427,680	845,583	318,680	335,129	115,074	108,327	437,198
Hardwoods								
Select white oak	639,303	1,182	421	2,927	187	-	-	211
Select red oak	1,448,460	4,234	7,395	2,373	649	-	1,310	313
Other red oak	607,462	15,118	6,656	7,283	-	-	97	268
Select hickory	124,381	-	-	377	-	-	-	228
Other hickory	82,933	-	-	-	-	-	-	372
Basswood	915,082	87	246	406	192	211	-	1,338
Beech	29,081	-	497	-	-	-	-	-
Yellow birch	206,586	-	146	410	3,712	288	438	8,044
Hard maple	1,642,312	-	5,029	1,611	2,674	515	281	174
Soft maple	1,398,125	1,231	10,389	10,243	15,112	815	2,545	9,459
Elm	381,237	315	1,239	716	1,603	209	-	2,186
Black ash	452,233	-	-	1,044	9,350	184	-	17,877
White & green ash	346,872	-	1,389	140	131	843	-	438
Cottonwood	32,097	123	-	367	-	-	-	-
Willow	26,416	-	-	-	-	-	-	476
Hackberry	2,241	-	-	-	-	-	-	-
Balsam poplar	40,391	-	-	-	2,528	647	264	1,210
Bigtooth aspen	711,108	4,377	3,449	2,731	2,008	239	1,203	1,607
Quaking aspen	1,897,162	20,555	25,156	27,256	28,627	4,610	15,118	12,276
Paper birch	1,124,014	1,965	4,959	8,726	22,081	-	4,118	17,973
River birch	11,008	-	-	-	-	-	-	-
Black cherry	190,621	-	437	826	4,035	106	165	-
Black walnut	24,060	-	-	-	-	-	-	-
Butternut	43,556	-	-	-	-	-	-	-
Other hardwoods	24,142	-	468	-	-	-	-	-
Total	12,400,883	49,187	67,876	67,436	92,889	8,667	25,539	74,450
All species	16,498,238	476,867	913,459	386,116	428,018	123,741	133,866	511,648

(Table 12 continued on next page)

(Table 12 continued)

Species group	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-beech-birch	Aspen	Paper birch	Exotic	Nonstocked
Softwoods								
Jack pine	409	72,764	1,353	6,444	34,074	3,568	-	1,663
Red pine	522	20,030	696	17,960	37,644	15,576	-	-
White pine	7,639	46,094	25,625	137,527	52,297	19,769	-	281
White spruce	1,862	1,146	8,976	27,756	49,846	13,343	-	223
Black spruce	9,066	-	2,630	3,670	10,461	3,260	-	-
Balsam fir	7,616	1,680	54,636	118,276	127,060	38,317	-	201
Hemlock	152	1,248	17,185	245,908	5,258	3,658	-	-
Tamarack	78,829	895	11,807	4,487	8,313	3,372	-	1,205
Eastern redcedar	-	2,326	1,380	492	-	-	-	-
Northern white-cedar	1,857	274	54,206	57,992	15,505	9,893	-	-
Other softwoods	-	329	-	142	-	-	1,011	-
Total	107,952	146,786	178,494	620,654	340,458	110,756	1,011	3,573
Hardwoods								
Select white oak	-	482,670	20,768	84,497	34,512	10,256	-	1,672
Select red oak	120	911,101	17,219	309,086	135,064	58,892	-	704
Other red oak	-	491,050	8,820	28,056	43,121	3,791	-	3,202
Select hickory	-	100,213	211	18,371	1,141	3,840	-	-
Other hickory	-	40,171	977	38,810	2,603	-	-	-
Basswood	-	67,722	26,297	778,529	31,724	7,753	-	577
Beech	-	338	435	27,811	-	-	-	-
Yellow birch	252	537	18,634	167,973	3,510	2,642	-	-
Hard maple	124	36,601	15,648	1,504,322	55,438	19,756	-	139
Soft maple	3,993	103,547	311,877	624,464	242,609	61,841	-	-
Elm	231	38,105	69,749	240,304	19,419	6,181	-	980
Black ash	547	9,028	275,570	101,448	28,400	7,526	-	1,259
White & green ash	-	26,798	82,521	214,315	15,032	5,050	-	215
Cottonwood	-	6,715	16,706	4,591	3,347	248	-	-
Willow	-	445	18,789	3,575	2,090	436	-	605
Hackberry	-	896	240	920	185	-	-	-
Balsam poplar	-	1,373	6,747	4,906	21,334	1,382	-	-
Bigtooth aspen	1,814	146,069	5,061	115,509	395,762	31,279	-	-
Quaking aspen	7,148	93,179	63,472	302,272	1,203,125	90,354	-	4,014
Paper birch	6,087	111,118	43,754	208,413	289,876	403,675	-	1,269
River birch	-	1,676	9,332	-	-	-	-	-
Black cherry	-	65,717	4,178	81,473	30,052	3,632	-	-
Black walnut	-	18,681	185	4,711	-	-	-	483
Butternut	-	19,044	467	21,534	2,103	408	-	-
Other hardwoods	-	3,128	11,116	8,563	698	169	-	-
Total	20,316	2,775,922	1,028,773	4,894,453	2,561,145	719,111	-	15,119
All species	128,268	2,922,708	1,207,267	5,515,107	2,901,603	829,867	1,011	18,692

Table 13.--Net volume of sawtimber on timberland by species group and forest type, Wisconsin, 1987

(In thousand board feet)[1/]

Species group	All types	Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	1,164,715	720,870	52,361	34,642	3,109	-	737	-
Red pine	2,500,439	64,151	1,782,693	201,147	12,643	-	21,054	973
White pine	2,925,042	40,405	221,755	1,110,628	60,606	14,398	17,863	34,830
White spruce	926,243	-	10,874	24,769	148,349	312,433	4,381	23,602
Black spruce	105,949	635	527	4,370	18,090	605	28,755	13,687
Balsam fir	1,363,969	-	6,150	16,602	440,104	7,308	51,137	42,187
Hemlock	1,185,056	-	2,454	9,404	25,896	602	10,595	46,207
Tamarack	216,507	-	-	1,824	10,222	-	5,220	27,417
Eastern redcedar	5,451	1,389	-	-	-	-	-	-
Northern white-cedar	1,281,335	-	2,083	9,567	135,111	-	9,300	691,284
Other softwoods	10,690	-	8,076	2,614	-	-	-	-
Total	11,685,396	827,450	2,086,973	1,415,567	854,130	335,346	149,042	880,187
Hardwoods								
Select white oak	2,252,247	-	1,740	9,169	-	-	-	1,113
Select red oak	4,809,999	10,235	10,077	8,741	2,767	-	2,682	1,619
Other red oak	1,835,446	34,747	19,309	21,560	-	-	519	1,363
Select hickory	297,392	-	-	-	-	-	-	1,257
Other hickory	91,562	-	-	-	-	-	-	961
Basswood	2,430,842	-	1,106	746	968	-	-	4,838
Beech	116,845	-	1,279	-	-	-	-	-
Yellow birch	560,829	-	620	1,312	13,536	645	1,816	24,583
Hard maple	3,775,436	-	1,835	7,338	4,353	1,425	734	926
Soft maple	2,263,284	-	2,792	18,052	20,418	2,318	1,696	14,196
Elm	1,050,671	1,412	-	1,865	4,383	582	-	4,546
Black ash	642,318	-	-	3,972	12,560	1,067	-	10,429
White & green ash	955,291	-	7,528	-	-	-	-	2,366
Cottonwood	129,868	-	-	727	-	-	-	-
Willow	90,377	-	-	-	-	-	-	2,088
Hackberry	5,763	-	-	-	-	-	-	-
Balsam poplar	111,708	-	-	-	4,221	1,736	-	3,084
Bigtooth aspen	1,639,713	1,540	5,731	4,274	3,103	-	4,863	2,620
Quaking aspen	2,971,130	15,919	35,468	52,891	40,887	6,008	20,404	27,198
Paper birch	1,086,089	2,778	6,489	18,495	16,363	-	4,731	16,639
River birch	27,299	-	-	-	-	-	-	-
Black cherry	333,371	-	1,168	-	2,515	669	-	-
Black walnut	95,914	-	-	-	-	-	-	-
Butternut	146,742	-	-	-	-	-	-	-
Other hardwoods	45,332	-	1,642	-	-	-	-	-
Total	27,765,468	66,631	96,784	149,142	126,074	14,450	37,445	119,826
All species	39,450,864	894,081	2,183,757	1,564,709	980,204	349,796	186,487	1,000,013

(Table 13 continued on next page)

(Table 13 continued)

Species group	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-beech-birch	Aspen	Paper birch	Exotic	Nonstocked
Softwoods								
Jack pine	-	198,806	3,309	18,045	116,525	13,273	-	3,038
Red pine	2,916	79,967	4,027	89,518	157,545	83,805	-	-
White pine	32,757	218,869	125,369	697,878	258,423	89,924	-	1,337
White spruce	6,878	2,412	39,042	126,629	178,186	47,458	-	1,230
Black spruce	9,434	-	8,011	9,166	10,746	1,923	-	-
Balsam fir	11,206	649	120,140	308,222	273,050	87,214	-	-
Hemlock	403	4,932	52,020	997,967	21,381	13,195	-	-
Tamarack	81,287	2,354	44,388	13,359	19,631	6,157	-	4,648
Eastern redcedar	-	945	1,063	2,054	-	-	-	-
Northern white-cedar	3,689	-	153,653	216,393	33,401	26,854	-	-
Other softwoods	-	-	-	-	-	-	-	-
Total	148,570	508,934	551,022	2,479,231	1,068,888	369,803	-	10,253
Hardwoods								
Select white oak	-	1,734,910	74,362	320,016	77,625	28,730	-	4,582
Select red oak	586	3,125,749	64,287	1,103,053	282,787	193,819	-	3,597
Other red oak	-	1,467,101	33,091	101,785	137,263	12,560	-	6,148
Select hickory	-	233,600	1,012	50,410	-	11,113	-	-
Other hickory	-	37,764	981	50,790	1,066	-	-	-
Basswood	-	180,494	64,200	2,102,122	61,840	12,947	-	1,581
Beech	-	-	840	114,726	-	-	-	-
Yellow birch	680	1,269	41,236	466,721	3,004	5,407	-	-
Hard maple	-	92,787	24,245	3,580,140	36,295	25,358	-	-
Soft maple	4,735	149,624	808,021	1,046,097	149,072	46,263	-	-
Elm	618	94,812	199,243	682,838	48,607	9,119	-	2,646
Black ash	-	15,451	421,846	147,092	19,767	10,134	-	-
White & green ash	-	71,844	255,552	582,331	23,283	11,160	-	1,227
Cottonwood	-	28,498	69,544	20,046	9,893	1,160	-	-
Willow	-	1,353	67,255	14,184	2,582	1,828	-	1,087
Hackberry	-	3,629	978	1,156	-	-	-	-
Balsam poplar	-	3,683	22,413	18,611	55,334	2,626	-	-
Bigtooth aspen	3,478	361,273	16,234	312,573	831,325	92,699	-	-
Quaking aspen	8,528	147,330	129,123	750,615	1,552,922	179,973	-	3,864
Paper birch	6,631	96,555	57,124	300,503	197,864	361,917	-	-
River birch	-	4,662	22,637	-	-	-	-	-
Black cherry	-	133,543	2,833	155,744	31,714	5,185	-	-
Black walnut	-	81,744	-	12,832	-	-	-	1,338
Butternut	-	60,543	1,384	77,090	7,725	-	-	-
Other hardwoods	-	5,195	23,427	13,954	1,114	-	-	-
Total	25,256	8,133,413	2,401,868	12,025,429	3,531,082	1,011,998	-	26,070
All species	173,826	8,642,347	2,952,890	14,504,660	4,599,970	1,381,801	-	36,323

1/ International 1/4-inch rule

Table 14.--Net volume of growing stock on timberland by species group and diameter class, Wisconsin, 1987

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods												
Jack pine	544,999	143,742	177,445	132,597	67,802	18,181	4,626	606	-	-	-	-
Red pine	927,330	231,280	259,016	162,993	99,875	52,613	40,988	35,103	27,815	10,104	7,523	20
White pine	620,740	26,853	47,023	55,077	58,450	65,629	72,704	75,572	62,012	41,919	86,302	29,199
White spruce	261,619	23,895	48,357	65,690	47,339	29,880	19,833	12,840	8,141	2,461	2,969	214
Black spruce	123,190	60,748	39,116	14,987	5,834	999	786	556	164	-	-	-
Balsam fir	636,429	158,260	174,925	151,394	91,675	38,083	13,651	7,147	1,294	-	-	-
Hemlock	299,256	8,330	20,259	32,825	36,140	43,488	38,450	40,375	28,294	19,092	28,666	3,337
Tamarack	144,966	53,801	50,380	19,658	11,488	4,598	2,272	1,786	983	-	-	-
Eastern redcedar	4,427	2,460	1,014	425	185	186	157	-	-	-	-	-
Northern white-cedar	529,396	131,471	145,590	103,729	79,881	35,292	21,028	7,889	2,288	1,416	812	-
Other softwoods	5,003	2,091	861	678	1,044	-	329	-	-	-	-	-
Total	4,097,355	842,931	963,986	740,053	499,713	288,949	214,824	181,874	130,991	74,992	126,272	32,770
Hardwoods												
Select white oak	639,303	43,525	69,760	84,094	94,218	90,218	78,673	58,496	42,161	26,099	37,428	14,631
Select red oak	1,448,460	87,635	168,476	215,362	228,083	199,567	162,874	129,032	94,449	56,524	84,028	22,430
Other red oak	607,462	40,070	81,503	102,540	99,619	91,413	74,123	48,565	29,118	17,788	19,188	3,535
Select hickory	124,381	17,790	21,930	27,785	22,971	15,514	9,102	5,719	2,034	894	642	-
Other hickory	82,933	28,132	25,794	10,864	10,078	4,531	2,169	675	484	-	206	-
Basswood	915,082	71,480	142,440	195,585	184,437	120,452	77,013	46,018	30,720	16,419	23,175	7,343
Beech	29,081	2,095	2,064	2,485	4,500	4,130	3,451	4,076	2,436	2,238	1,606	-
Yellow birch	206,586	18,867	30,289	38,043	33,073	25,135	19,957	18,623	10,132	5,717	5,684	1,066
Hard maple	1,642,312	292,272	317,038	276,290	198,802	147,925	120,770	103,639	77,375	40,388	55,358	12,455
Soft maple	1,398,125	374,911	340,557	241,627	150,502	104,213	66,547	36,589	27,615	20,045	23,765	11,754
Elm	381,237	29,814	48,115	66,524	71,636	54,898	44,896	28,047	13,343	7,928	11,022	5,014
Black ash	452,233	141,765	117,915	84,776	51,808	29,482	14,646	6,816	2,131	1,235	1,659	-
White & green ash	346,872	41,388	56,413	70,028	68,047	44,259	31,926	15,484	7,701	4,686	6,196	744
Cottonwood	32,097	515	1,224	886	3,729	3,423	2,529	3,650	2,959	1,498	2,743	8,941
Willow	26,416	728	1,432	2,965	2,537	4,402	3,349	5,170	1,888	1,369	2,309	267
Hackberry	2,241	431	171	343	485	-	546	-	-	-	265	-
Balsam poplar	40,391	3,328	5,656	6,179	7,395	7,139	5,371	2,135	1,479	908	801	-
Bigtooth aspen	711,108	65,463	112,288	178,402	169,710	103,161	50,994	21,102	4,911	1,885	2,955	237
Quaking aspen	1,897,162	357,394	468,861	467,281	325,666	166,250	73,232	27,192	9,043	2,070	173	-
Paper birch	1,124,014	291,366	373,721	244,633	133,424	55,373	18,867	5,143	1,397	-	90	-
River birch	11,008	1,003	2,127	2,031	1,440	1,754	922	-	553	574	604	-
Black cherry	190,621	46,265	44,768	39,233	24,745	18,157	8,757	3,956	3,606	712	422	-
Black walnut	24,060	2,211	1,897	3,081	5,668	4,107	1,871	2,049	2,038	889	249	-
Butternut	43,556	4,505	5,439	7,196	8,538	7,588	4,884	2,718	1,253	575	597	263
Other hardwoods	24,142	5,239	5,671	5,055	3,799	2,727	618	672	151	-	210	-
Total	12,400,883	1,968,192	2,445,549	2,373,288	1,904,910	1,305,818	878,087	575,566	368,977	210,441	281,375	88,680
All species	16,498,238	2,811,123	3,409,535	3,113,341	2,404,623	1,594,767	1,092,911	757,440	499,968	285,433	407,647	121,450

Table 15.--Net volume of sawtimber on timberland by species group and diameter class, Wisconsin, 1987

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods										
Jack pine	1,164,715	688,699	352,311	95,860	24,653	3,192	-	-	-	-
Red pine	2,500,439	939,807	564,371	298,194	233,604	201,512	160,405	58,652	43,777	117
White pine	2,925,042	219,864	274,448	333,392	389,905	416,813	354,692	244,138	512,334	179,456
White spruce	926,243	296,314	230,556	150,447	104,831	68,348	44,590	13,524	16,473	1,160
Black spruce	105,949	64,325	28,218	5,075	4,324	3,088	919	-	-	-
Balsam fir	1,363,969	635,883	424,710	188,525	69,967	37,672	7,212	-	-	-
Hemlock	1,185,056	115,538	144,460	186,288	171,970	185,968	132,970	91,239	139,985	16,638
Tamarack	216,507	102,137	60,919	25,179	12,670	10,016	5,586	-	-	-
Eastern redcedar	5,451	2,452	1,014	1,040	945	-	-	-	-	-
Northern white-cedar	1,281,335	506,708	407,297	185,682	113,180	43,118	12,758	7,983	4,609	-
Other softwoods	10,690	2,938	5,835	-	1,917	-	-	-	-	-
Total	11,685,396	3,574,665	2,494,139	1,469,682	1,127,966	969,727	719,132	415,536	717,178	197,371
Hardwoods										
Select white oak	2,252,247	-	518,080	467,142	394,199	287,907	205,990	126,588	181,413	70,928
Select red oak	4,809,999	-	1,107,999	968,324	793,435	637,652	471,545	283,944	430,335	116,765
Other red oak	1,835,446	-	475,103	433,129	352,960	232,972	141,257	86,861	95,274	17,890
Select hickory	297,392	-	127,210	80,129	45,223	27,493	9,955	4,313	3,069	-
Other hickory	91,562	-	51,999	22,348	10,679	3,257	2,318	-	961	-
Basswood	2,430,842	-	866,857	574,122	372,395	225,774	152,823	82,505	118,078	38,288
Beech	116,845	-	24,150	21,925	17,485	20,930	12,537	11,467	8,351	-
Yellow birch	560,829	-	134,622	114,275	96,578	94,125	52,924	30,518	31,666	6,121
Hard maple	3,775,436	-	939,391	720,567	603,679	528,582	402,205	213,485	298,338	69,189
Soft maple	2,263,284	-	840,445	536,652	325,691	173,721	129,118	93,180	110,072	54,405
Elm	1,050,671	-	307,878	238,910	199,902	127,092	61,694	37,162	52,961	25,072
Black ash	642,318	-	328,955	171,841	79,964	35,871	10,906	6,406	8,375	-
White & green ash	955,291	-	392,208	235,129	160,244	75,970	37,074	22,222	28,985	3,459
Cottonwood	129,868	-	15,826	14,060	10,509	15,480	12,759	6,590	12,375	42,269
Willow	90,377	-	10,456	17,953	13,987	22,057	8,235	6,004	10,460	1,225
Hackberry	5,763	-	2,095	-	2,439	-	-	-	1,229	-
Balsam poplar	111,708	-	29,850	31,243	24,659	10,225	7,182	4,525	4,024	-
Bigtooth aspen	1,639,713	-	761,523	480,540	244,055	103,480	24,271	9,488	15,119	1,237
Quaking aspen	2,971,130	-	1,536,046	837,894	385,566	148,122	50,654	11,816	1,032	-
Paper birch	1,086,089	-	662,811	286,313	100,464	28,083	7,907	-	511	-
River birch	27,299	-	6,673	8,178	4,346	-	2,578	2,720	2,804	-
Black cherry	333,371	-	144,296	99,628	45,478	20,295	18,035	3,553	2,086	-
Black walnut	95,914	-	35,068	23,372	10,312	10,760	10,637	4,515	1,250	-
Butternut	146,742	-	50,752	42,447	25,705	14,042	6,592	2,904	3,003	1,297
Other hardwoods	45,332	-	20,828	15,214	3,458	3,755	877	-	1,200	-
Total	27,765,468	-	9,391,121	6,441,335	4,323,412	2,847,645	1,840,073	1,050,766	1,422,971	448,145
All species	39,450,864	3,574,665	11,885,260	7,911,017	5,451,378	3,817,372	2,559,205	1,466,302	2,140,149	645,516

1/ International 1/4-inch rule

Table 16.--Annual net growth, mortality and removals of growing stock and sawtimber on timberland by softwoods and harwoods, Wisconsin, 1982 and 1986

Species group	Growing stock		Sawtimber	
	1982	1986	1982	1986
	Thousand cubic feet		Thousand board feet	1/
NET GROWTH				
Softwoods	142,663	179,860	458,941	638,291
Hardwoods	348,753	391,467	984,078	1,368,200
All species	491,236	571,327	1,443,019	2,006,490
MORTALITY				
Softwoods	22,051	18,856	41,795	38,198
Hardwoods	114,717	85,824	209,988	179,850
All species	136,768	104,680	251,783	218,056
REMOVALS				
Softwoods	59,388	63,766	133,652	143,743
Hardwoods	225,570	264,911	692,675	811,143
All species	284,958	328,677	826,327	954,886

1/ International 1/4 inch rule

Table 17.--Net volume in short-log trees on timberland by species group and diameter class, Wisconsin, 1987

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods										
Jack pine	5,447	1,272	1,375	455	2,345	-	-	-	-	-
Red pine	631	179	72	190	-	190	-	-	-	-
White pine	10,481	667	2,140	1,751	405	649	490	846	1,838	1,695
White spruce	385	-	158	227	-	-	-	-	-	-
Black spruce	184	184	-	-	-	-	-	-	-	-
Balsam fir	1,257	594	154	194	-	315	-	-	-	-
Hemlock	4,947	488	775	1,090	693	636	589	351	175	150
Tamarack	573	134	237	202	-	-	-	-	-	-
Northern white-cedar	8,523	3,362	3,111	1,111	723	106	110	-	-	-
Total	32,428	6,880	8,022	5,220	4,166	1,896	1,189	1,197	2,013	1,845
Hardwoods										
Select white oak	50,312	-	3,968	9,047	10,240	7,920	5,925	3,810	7,149	2,253
Select red oak	47,620	-	1,991	7,672	9,839	7,507	5,181	3,191	9,261	2,978
Other red oak	53,502	-	4,614	10,057	9,774	11,941	6,337	3,841	5,936	1,002
Select hickory	3,842	-	316	1,369	1,484	673	-	-	-	-
Other hickory	1,348	-	1,166	182	-	-	-	-	-	-
Basswood	15,152	-	1,830	2,295	2,699	2,479	1,969	1,066	1,304	1,510
Beech	1,299	-	-	-	200	376	151	-	216	356
Yellow birch	8,057	-	1,396	2,330	1,509	925	756	335	704	102
Hard maple	41,366	-	3,551	9,264	7,360	7,091	4,003	3,290	4,914	1,893
Soft maple	34,383	-	3,549	7,090	5,017	4,522	3,076	3,729	2,547	4,853
Elm	19,838	-	2,147	3,940	3,842	3,142	2,166	1,168	1,514	1,919
Black ash	1,491	-	523	536	354	-	78	-	-	-
White & green ash	5,677	-	642	1,717	1,111	850	66	255	1,036	-
Cottonwood	1,486	-	265	-	275	-	189	-	248	509
Willow	3,243	-	211	611	609	-	412	206	913	281
Balsam poplar	389	-	-	-	-	389	-	-	-	-
Bigtooth aspen	4,601	-	638	1,525	638	1,220	580	-	-	-
Quaking aspen	10,964	-	2,846	3,934	3,381	389	156	258	-	-
Paper birch	8,423	-	2,164	3,940	1,261	572	377	109	-	-
River birch	726	-	-	-	425	-	301	-	-	-
Black cherry	5,671	-	453	2,625	1,121	466	-	507	499	-
Black walnut	523	-	229	-	-	294	-	-	-	-
Butternut	2,466	-	346	643	736	298	216	-	227	-
Other hardwoods	2,277	-	649	106	801	416	-	-	148	157
Total	324,656	-	33,494	68,883	62,676	51,470	31,939	21,765	36,616	17,813
All species	357,084	6,880	41,516	74,103	66,842	53,366	33,128	22,962	38,629	19,658

Table 18.--Net volume in short-log trees on timberland by species group and diameter class, Wisconsin, 1987

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0+
Softwoods										
Jack pine	18,769	4,417	4,723	1,574	8,055	-	-	-	-	-
Red pine	2,570	710	286	751	-	823	-	-	-	-
White pine	37,159	1,693	6,414	5,909	1,439	2,435	1,839	3,331	7,234	6,865
White spruce	1,757	-	694	1,063	-	-	-	-	-	-
Black spruce	482	482	-	-	-	-	-	-	-	-
Balsam fir	3,400	1,465	400	549	-	986	-	-	-	-
Hemlock	12,016	968	1,736	2,597	1,710	1,642	1,550	926	472	415
Tamarack	2,469	538	1,032	899	-	-	-	-	-	-
Northern white-cedar	29,346	11,106	10,713	3,980	2,725	394	428	-	-	-
Total	107,968	21,379	25,998	17,322	13,929	6,280	3,817	4,257	7,706	7,280
Hardwoods										
Select white oak	132,401	-	11,362	24,650	26,999	20,536	15,159	9,718	18,211	5,766
Select red oak	108,442	-	4,374	17,128	22,076	16,912	11,750	7,403	21,718	7,081
Other red oak	123,431	-	10,405	22,960	22,369	27,415	14,765	9,003	14,118	2,396
Select hickory	10,405	-	938	3,754	3,937	1,776	-	-	-	-
Other hickory	3,623	-	3,171	452	-	-	-	-	-	-
Basswood	33,020	-	3,780	4,869	5,817	5,406	4,327	2,367	2,921	3,533
Beech	3,503	-	-	-	552	1,041	391	-	585	934
Yellow birch	19,059	-	2,870	5,183	3,644	2,326	1,948	883	1,910	295
Hard maple	101,592	-	8,123	21,926	17,806	17,498	10,036	8,409	12,764	5,030
Soft maple	91,317	-	10,557	19,674	13,400	11,853	7,851	9,448	6,393	12,141
Elm	51,105	-	5,260	9,787	9,687	8,212	5,674	2,999	4,048	5,438
Black ash	4,231	-	1,667	1,474	875	-	215	-	-	-
White & green ash	13,301	-	1,585	4,182	2,564	1,953	197	567	2,253	-
Cottonwood	4,807	-	793	-	828	-	587	-	839	1,760
Willow	10,068	-	600	1,783	1,862	-	1,284	652	2,933	954
Balsam poplar	985	-	-	-	-	985	-	-	-	-
Bigtooth aspen	7,739	-	1,006	2,526	1,077	2,131	999	-	-	-
Quaking aspen	25,059	-	6,118	8,881	8,053	980	382	645	-	-
Paper birch	23,212	-	5,816	10,771	3,545	1,637	1,110	333	-	-
River birch	2,421	-	-	-	1,410	-	1,011	-	-	-
Black cherry	14,808	-	1,285	6,974	2,897	1,176	-	1,234	1,242	-
Black walnut	1,410	-	632	-	-	778	-	-	-	-
Butternut	6,540	-	965	1,780	1,938	771	534	-	552	-
Other hardwoods	8,255	-	2,342	394	2,852	1,508	-	-	555	604
Total	800,734	-	83,649	169,148	154,188	124,894	78,220	53,661	91,042	45,932
All species	908,702	21,379	109,647	186,470	168,117	131,174	82,037	57,918	98,748	53,212

1/ International 1/4-inch rule

Table 19.--All live tree biomass on timberland
by species group and tree biomass component, Wisconsin, 1987

ALL UNITS

Species group	All components	Component					Average weight per cubic foot (including bark)
		Growing stock		Cull		1- to 5-inch trees	
		Bole	Tops, limbs, and stumps	Bole	Tops, limbs, and stumps		
	Green tons						Pounds
Softwoods							
Jack pine	23,260,135	14,366,365	2,900,031	1,262,171	246,136	4,485,432	46
Red pine	30,806,168	23,322,669	4,382,523	305,155	58,903	2,736,918	46
White pine	23,174,697	16,772,683	2,900,964	1,225,484	217,876	2,057,690	45
White spruce	9,995,417	6,381,820	2,328,668	193,155	72,971	1,018,803	45
Black spruce	9,345,748	3,057,448	1,322,779	104,821	45,557	4,815,143	45
Balsam fir	34,243,285	16,941,265	6,910,033	423,338	163,462	9,805,187	47
Hemlock	14,098,935	9,456,037	2,983,103	841,057	288,084	530,654	51
Tamarack	7,892,839	4,259,717	923,565	248,017	54,117	2,407,423	52
Eastern redcedar	439,536	99,154	45,381	74,655	31,818	188,528	43
Northern white-cedar	22,507,878	10,836,049	4,720,954	1,994,782	826,810	4,129,283	36
Other softwoods	313,962	110,245	46,086	48,173	17,824	91,634	44
Total	176,078,600	105,603,452	29,464,087	6,720,808	2,023,558	32,266,695	45
Hardwoods							
Select white oak	45,865,798	23,135,189	9,362,252	7,630,542	2,984,155	2,753,660	58
Select red oak	89,846,709	55,878,239	21,172,378	8,276,134	2,985,123	1,534,835	64
Other red oak	52,122,856	24,051,922	9,626,920	12,025,194	4,723,593	1,695,227	64
Select hickory	8,307,658	4,591,914	1,914,667	889,358	370,153	541,566	63
Other hickory	5,329,127	2,796,395	1,265,779	258,629	108,074	900,250	59
Basswood	38,591,764	23,307,396	9,419,335	2,712,211	1,016,038	2,136,784	42
Beech	2,121,628	985,687	364,866	444,126	157,756	169,193	59
Yellow birch	16,955,529	7,711,807	3,157,886	2,947,473	1,186,678	1,951,685	61
Hard maple	115,244,061	59,984,481	24,401,321	12,334,777	4,729,905	13,793,577	63
Soft maple	93,792,692	43,926,017	18,733,718	9,602,903	3,790,244	17,739,810	55
Elm	25,491,300	12,747,371	5,322,295	3,042,071	1,238,600	3,140,963	55
Black ash	24,839,299	12,847,046	5,963,939	1,004,945	459,879	4,563,490	50
White & green ash	18,289,730	10,757,025	4,344,749	1,281,980	497,091	1,408,885	51
Cottonwood	1,512,177	1,000,243	333,525	108,548	37,424	32,437	51
Willow	1,780,358	776,350	290,389	429,111	146,659	137,849	48
Hackberry	131,127	71,826	31,626	5,152	2,635	19,888	52
Balsam poplar	2,051,569	1,300,239	487,445	92,737	31,196	139,952	53
Bigtooth aspen	32,106,591	21,771,176	6,557,916	1,479,021	421,026	1,877,452	50
Quaking aspen	101,318,292	56,554,222	18,593,796	7,456,026	2,334,985	16,379,263	50
Paper birch	64,783,034	35,699,003	15,780,745	3,632,531	1,553,591	8,117,164	55
River birch	801,726	371,692	146,482	129,300	46,750	107,502	55
Black cherry	13,491,425	5,249,469	2,242,155	2,357,476	1,018,549	2,623,776	49
Black walnut	1,395,998	797,581	310,353	200,252	77,150	10,662	54
Butternut	2,639,531	1,179,276	464,419	630,384	247,970	117,482	45
Other hardwoods	3,153,307	670,208	300,786	970,167	414,422	797,724	46
Noncommercial spp.	10,345,447	-	-	2,237,592	1,166,354	6,941,501	50
Total	772,308,733	408,161,774	160,589,742	82,178,640	31,746,000	89,632,577	56
All species	948,387,333	513,765,226	190,053,829	88,899,448	33,769,558	121,899,272	53

(Table 19 continued on next page)

(Table 19 continued)

NORTHEAST

Species group	All components	Component: Growing stock		Component: Cull		1- to 5-inch trees	Average weight per cubic foot (including bark)
		Bole	Tops, limbs, and stumps	Bole	Tops, limbs, and stumps		
	Green tons						Pounds
Softwoods							
Jack pine	3,716,284	2,351,921	466,616	351,541	67,662	478,544	46
Red pine	11,045,662	8,556,427	1,570,045	79,090	14,758	825,342	46
White pine	8,191,867	6,200,568	1,033,268	316,279	57,983	583,769	45
White spruce	3,587,932	2,337,051	860,747	118,781	45,268	226,085	45
Black spruce	5,024,579	1,867,894	805,428	44,493	17,979	2,288,785	45
Balsam fir	14,193,827	6,872,708	2,848,672	152,799	61,172	4,258,476	47
Hemlock	8,965,727	6,218,466	1,905,313	317,730	111,941	412,277	51
Tamarack	2,550,182	1,266,762	281,509	62,729	14,020	925,162	52
Eastern redcedar	3,050	-	-	1,984	1,066	-	43
Northern white-cedar	11,865,700	5,716,534	2,541,840	882,320	374,655	2,350,351	36
Other softwoods	50,303	5,628	2,406	32,023	10,246	-	44
Total	69,195,113	41,393,959	12,315,844	2,359,769	776,750	12,348,791	45
Hardwoods							
Select white oak	575,594	359,996	153,868	20,838	8,361	32,531	58
Select red oak	12,557,251	8,271,853	3,234,592	604,678	242,237	203,891	64
Other red oak	3,047,672	1,659,888	677,848	425,270	173,648	111,018	64
Select hickory	-	-	-	-	-	-	-
Other hickory	619,575	339,355	146,125	23,254	9,635	101,206	59
Basswood	11,752,719	7,610,447	3,143,669	290,774	124,231	583,598	42
Beech	989,302	479,822	173,590	180,570	62,951	92,369	59
Yellow birch	6,377,665	3,205,100	1,270,822	778,599	307,372	815,772	61
Hard maple	45,360,343	25,671,130	10,432,740	2,953,363	1,177,008	5,126,102	63
Soft maple	21,666,979	10,803,286	4,728,144	1,378,124	568,109	4,189,316	55
Elm	5,645,530	3,005,002	1,252,070	402,291	166,717	819,450	55
Black ash	5,106,019	2,368,618	1,109,506	207,863	97,623	1,322,409	50
White & green ash	3,729,533	2,383,628	966,746	102,577	44,996	231,586	51
Cottonwood	190,366	120,639	45,231	-	-	24,496	51
Willow	151,087	69,079	25,501	10,010	3,923	42,574	48
Hackberry	-	-	-	-	-	-	-
Balsam poplar	1,142,269	798,578	301,637	16,166	6,018	19,870	53
Bigtooth aspen	7,159,411	4,655,298	1,418,569	451,858	137,570	496,116	50
Quaking aspen	29,498,233	16,059,929	5,247,393	1,709,791	527,976	5,953,144	50
Paper birch	20,937,326	12,252,858	5,389,490	797,597	345,087	2,152,294	55
River birch	-	-	-	-	-	-	-
Black cherry	3,479,135	1,414,260	618,593	500,650	225,774	719,858	49
Black walnut	-	-	-	-	-	-	-
Butternut	204,420	142,472	53,347	5,828	2,773	-	45
Other hardwoods	782	-	-	-	-	782	46
Noncommercial spp.	1,687,117	-	-	423,719	222,843	1,040,555	50
Total	181,878,328	101,671,238	40,389,481	11,283,820	4,454,852	24,078,937	55
All species	251,073,441	143,065,197	52,705,325	13,643,589	5,231,602	36,427,728	52

(Table 19 continued on next page)

(Table 19 continued)

NORTHWEST

Species group	All components	Component					Average weight per cubic foot (including bark)
		Growing stock		Cull		1- to 5-inch trees	
		Bole	Tops, limbs, and stumps	Bole	Tops, limbs, and stumps		
	Green tons						Pounds
Softwoods							
Jack pine	10,394,253	6,612,315	1,346,000	436,556	85,989	1,913,393	46
Red pine	7,115,212	5,401,940	980,312	76,308	14,350	642,302	46
White pine	6,158,989	4,637,774	781,125	399,671	64,990	275,429	45
White spruce	5,806,524	3,851,851	1,390,186	74,374	27,703	462,410	45
Black spruce	3,919,176	1,055,925	457,572	60,328	27,578	2,317,773	45
Balsam fir	18,581,262	9,477,330	3,806,235	235,974	89,872	4,971,851	47
Hemlock	3,591,799	2,238,737	726,797	402,092	136,603	87,570	51
Tamarack	3,433,780	1,813,246	392,800	146,817	31,878	1,049,039	52
Eastern redcedar	-	-	-	-	-	-	-
Northern white-cedar	5,562,576	2,676,407	1,103,130	850,452	343,665	588,922	36
Other softwoods	12,144	8,830	3,314	-	-	-	44
Total	64,575,715	37,774,355	10,987,471	2,682,572	822,628	12,308,689	46
Hardwoods							
Select white oak	5,777,175	2,866,983	1,243,494	692,180	275,308	699,210	58
Select red oak	25,960,822	16,040,044	6,543,023	1,962,011	769,833	645,911	64
Other red oak	3,895,586	1,670,316	690,187	953,675	385,875	195,533	64
Select hickory	-	-	-	-	-	-	-
Other hickory	765,000	374,011	166,675	54,549	21,271	148,494	59
Basswood	15,690,466	9,747,107	3,987,689	889,896	351,980	713,794	42
Beech	-	-	-	-	-	-	-
Yellow birch	7,734,282	3,236,779	1,335,927	1,646,264	668,411	846,901	61
Hard maple	48,028,994	22,800,836	9,676,165	5,967,370	2,397,299	7,187,324	63
Soft maple	40,041,026	17,409,868	7,688,276	4,381,234	1,829,505	8,732,143	55
Elm	7,739,699	4,311,556	1,768,739	766,378	311,138	581,888	55
Black ash	13,058,571	6,856,926	3,198,860	521,737	241,713	2,239,335	50
White & green ash	4,753,002	2,970,391	1,221,083	294,202	116,030	151,296	51
Cottonwood	1,509	-	-	-	-	1,509	51
Willow	32,593	5,291	2,082	13,777	4,288	7,155	48
Hackberry	-	-	-	-	-	-	-
Balsam poplar	626,091	332,380	130,893	45,720	16,642	100,456	53
Bigtooth aspen	12,326,949	8,319,080	2,518,502	617,861	173,678	697,828	50
Quaking aspen	46,057,535	25,805,936	8,413,634	3,849,194	1,200,779	6,787,992	50
Paper birch	27,090,019	15,150,737	6,720,100	1,513,343	649,410	3,056,429	55
River birch	-	-	-	-	-	-	-
Black cherry	2,049,912	631,716	279,950	533,344	238,299	366,603	49
Black walnut	7,380	-	-	5,368	2,012	-	54
Butternut	267,495	107,480	42,972	54,879	20,784	41,380	45
Other hardwoods	25,605	3,353	1,517	14,328	6,407	-	46
Noncommercial spp.	3,028,577	-	-	508,136	263,019	2,257,422	50
Total	264,958,288	138,640,790	55,629,768	25,285,446	9,943,681	35,458,603	55
All species	329,534,003	176,415,145	66,617,239	27,968,018	10,766,309	47,767,292	53

(Table 19 continued on next page)

(Table 19 continued)

CENTRAL

Species group	All components	Component: Growing stock: Bole	Component: Growing stock: Tops, limbs, and stumps	Component: Cull: Bole	Component: Cull: Tops, limbs, and stumps	Component: 1- to 5-inch trees	Average weight per cubic foot (including bark)
	Green tons						Pounds
Softwoods							
Jack pine	8,821,953	5,190,195	1,045,698	427,009	84,211	2,074,840	46
Red pine	9,193,821	6,665,759	1,302,585	114,988	22,714	1,087,775	46
White pine	7,219,939	5,037,023	901,612	470,108	85,830	725,366	45
White spruce	271,193	41,465	17,477	-	-	212,251	45
Black spruce	262,224	82,098	36,297	-	-	143,829	45
Balsam fir	1,227,784	515,595	222,478	31,396	10,683	447,632	47
Hemlock	1,421,936	919,214	317,570	118,604	38,224	28,324	51
Tamarack	1,401,796	830,356	180,359	33,171	7,160	350,750	52
Eastern redcedar	50,384	14,178	6,115	9,815	3,781	16,495	43
Northern white-cedar	1,820,779	751,567	344,396	78,476	31,966	614,374	36
Other softwoods	228,554	79,791	33,401	16,150	7,578	91,634	44
Total	31,920,363	20,127,241	4,407,988	1,299,717	292,147	5,793,270	46
Hardwoods							
Select white oak	12,126,603	5,702,103	2,455,431	1,947,537	805,861	1,215,671	58
Select red oak	20,965,674	12,854,172	4,845,136	2,181,049	787,913	297,404	64
Other red oak	28,034,567	12,274,486	5,089,143	6,773,534	2,756,878	1,140,526	64
Select hickory	526,211	230,264	91,608	105,989	44,444	53,906	63
Other hickory	849,029	468,605	203,880	42,786	17,353	116,405	59
Basswood	3,512,308	1,998,869	783,240	364,196	135,658	230,345	42
Beech	85,893	34,966	13,810	28,259	8,858	-	59
Yellow birch	2,260,682	947,439	409,383	441,716	179,818	282,326	61
Hard maple	8,481,852	4,374,297	1,688,957	1,245,349	447,296	725,953	63
Soft maple	22,086,960	10,497,881	4,380,095	2,391,971	902,537	3,914,476	55
Elm	3,012,938	1,339,958	580,751	378,696	159,496	554,037	54
Black ash	3,729,253	2,028,584	931,673	128,712	57,421	582,863	50
White & green ash	2,441,271	1,305,558	533,492	268,518	105,608	228,095	51
Cottonwood	131,653	74,122	22,844	26,376	8,311	-	51
Willow	165,804	88,590	31,777	25,738	8,926	10,773	48
Hackberry	-	-	-	-	-	-	-
Balsam poplar	-	-	-	-	-	-	-
Bigtooth aspen	7,373,436	5,097,247	1,558,605	186,411	49,774	481,399	50
Quaking aspen	18,803,011	10,762,781	3,648,719	1,181,779	375,387	2,834,345	50
Paper birch	9,395,359	4,311,829	1,965,360	706,994	315,119	2,096,057	55
River birch	302,928	130,780	51,569	63,621	25,174	31,784	55
Black cherry	2,004,187	539,168	237,099	341,501	155,078	731,341	49
Black walnut	35,622	8,281	3,037	18,201	6,103	-	54
Butternut	322,487	152,491	56,244	81,219	31,079	1,454	45
Other hardwoods	422,299	114,200	51,727	101,402	45,277	109,693	46
Noncommercial spp.	1,431,862	-	-	245,340	126,712	1,059,810	50
Total	148,501,889	75,336,671	29,633,580	19,276,894	7,556,081	16,698,663	57
All species	180,422,252	95,463,912	34,041,568	20,576,611	7,848,228	22,491,933	54

(Table 19 continued on next page)

(Table 19 continued)

SOUTHWEST

Species group	All components	Component					Average weight per cubic foot (including bark)
		Growing stock		Cull		1- to 5-inch trees	
		Bole	Tops, limbs, and stumps	Bole	Tops, limbs, and stumps		
	Green tons						Pounds
Softwoods							
Jack pine	250,875	149,413	27,468	47,065	8,274	18,655	46
Red pine	2,608,674	2,020,337	398,010	20,703	4,395	165,229	46
White pine	653,714	345,377	71,619	18,568	4,704	213,446	45
White spruce	102,932	10,263	4,399	-	-	88,270	45
Black spruce	36,938	25,494	11,444	-	-	-	45
Balsam fir	7,894	5,718	2,176	-	-	-	47
Hemlock	-	-	-	-	-	-	-
Tamarack	-	-	-	-	-	-	-
Eastern redcedar	225,646	52,559	24,428	49,036	20,270	79,353	43
Northern white-cedar	-	-	-	-	-	-	-
Other softwoods	-	-	-	-	-	-	-
Total	3,886,673	2,609,161	539,544	135,372	37,643	564,953	46
Hardwoods							
Select white oak	20,465,920	10,175,061	4,052,791	4,001,431	1,543,137	693,500	58
Select red oak	25,453,114	15,653,599	5,518,101	3,013,283	1,017,924	250,207	64
Other red oak	13,577,213	6,476,474	2,428,475	3,295,044	1,199,801	177,419	64
Select hickory	5,356,349	2,963,606	1,253,912	548,463	232,130	358,238	63
Other hickory	2,586,713	1,342,484	625,107	114,296	50,381	454,445	59
Basswood	6,179,662	3,174,946	1,218,313	976,045	339,532	470,826	42
Beech	-	-	-	-	-	-	-
Yellow birch	68,410	48,850	19,560	-	-	-	61
Hard maple	8,900,017	4,577,838	1,662,867	1,633,065	537,770	488,477	63
Soft maple	6,302,097	3,329,005	1,241,337	863,720	295,704	572,331	55
Elm	6,337,023	2,842,855	1,201,337	1,101,697	440,737	750,397	55
Black ash	833,017	421,279	180,862	75,252	31,724	123,900	50
White & green ash	2,737,721	1,534,842	613,620	250,937	91,383	246,939	51
Cottonwood	909,482	643,660	213,267	36,620	9,503	6,432	51
Willow	551,261	248,718	98,630	119,911	38,256	45,746	48
Hackberry	96,027	46,241	22,580	5,152	2,635	19,419	52
Balsam poplar	62,285	44,416	13,950	-	-	3,919	53
Bigtooth aspen	4,412,123	3,073,815	887,223	200,487	53,344	197,254	50
Quaking aspen	4,313,340	2,502,462	805,597	453,222	148,578	403,481	50
Paper birch	5,978,263	3,216,277	1,378,170	578,673	228,983	576,160	55
River birch	498,798	240,912	94,913	65,679	21,576	75,718	55
Black cherry	3,298,586	1,456,687	622,848	562,274	238,002	418,775	49
Black walnut	1,007,539	582,581	224,969	143,065	54,684	2,240	54
Butternut	1,702,810	696,321	277,609	472,560	187,141	69,179	45
Other hardwoods	1,571,768	298,129	131,475	492,526	205,726	443,912	46
Noncommercial spp.	2,909,050	-	-	635,396	336,913	1,936,741	50
Total	126,108,588	65,591,058	24,787,513	19,638,798	7,305,564	8,785,655	57
All species	129,995,261	68,200,219	25,327,057	19,774,170	7,343,207	9,350,608	56

(Table 19 continued on next page)

(Table 19 continued)

SOUTHEAST

Species group	All components	Component					Average weight per cubic foot (including bark)
		Growing stock		Cull		1- to 5-inch trees	
		Bole	Tops, limbs, and stumps	Bole	Tops, limbs, and stumps		
	Green tons						Pounds
Softwoods							
Jack pine	76,770	62,521	14,249	-	-	-	46
Red pine	842,799	678,206	131,571	14,066	2,686	16,270	46
White pine	950,188	551,941	113,340	20,858	4,369	259,680	45
White spruce	226,836	141,190	55,859	-	-	29,787	45
Black spruce	102,831	26,037	12,038	-	-	64,756	45
Balsam fir	232,518	69,914	30,472	3,169	1,735	127,228	47
Hemlock	119,473	79,620	33,423	2,631	1,316	2,483	51
Tamarack	507,081	349,353	68,897	5,300	1,059	82,472	52
Eastern redcedar	160,456	32,417	14,838	13,820	6,701	92,680	43
Northern white-cedar	3,258,823	1,691,541	731,588	183,534	76,524	575,636	36
Other softwoods	22,961	15,996	6,965	-	-	-	44
Total	6,500,736	3,698,736	1,213,240	243,378	94,390	1,250,992	41
Hardwoods							
Select white oak	6,920,506	4,031,046	1,456,668	968,556	351,488	112,748	58
Select red oak	4,909,848	3,058,571	1,031,526	515,113	167,216	137,422	64
Other red oak	3,567,818	1,970,758	741,267	577,671	207,391	70,731	64
Select hickory	2,425,098	1,398,044	569,147	234,906	93,579	129,422	63
Other hickory	508,810	271,940	123,992	23,744	9,434	79,700	59
Basswood	1,456,609	776,027	286,424	191,300	64,637	138,221	42
Beech	1,046,433	470,899	177,466	235,297	85,947	76,824	59
Yellow birch	514,490	273,639	122,194	80,894	31,077	6,686	61
Hard maple	4,472,855	2,560,380	940,592	535,630	170,532	265,721	63
Soft maple	3,695,630	1,885,977	695,866	587,854	194,389	331,544	55
Elm	2,756,110	1,248,000	519,398	393,009	160,512	435,191	55
Black ash	2,112,439	1,171,639	543,038	71,381	31,398	294,983	50
White & green ash	4,628,203	2,562,606	1,009,808	365,746	139,074	550,969	51
Cottonwood	279,167	161,822	52,183	45,552	19,610	-	51
Willow	879,613	364,672	132,399	259,675	91,266	31,601	48
Hackberry	35,100	25,585	9,046	-	-	469	52
Balsam poplar	220,924	124,865	40,965	30,851	8,536	15,707	53
Bigtooth aspen	834,672	625,736	175,017	22,404	6,660	4,855	50
Quaking aspen	2,646,173	1,423,114	478,453	262,040	82,265	400,301	50
Paper birch	1,382,067	767,302	327,625	35,924	14,992	236,224	55
River birch	-	-	-	-	-	-	-
Black cherry	2,659,605	1,207,638	483,665	419,707	161,396	387,199	49
Black walnut	345,457	206,719	82,347	33,618	14,351	8,422	53
Butternut	142,319	80,512	34,247	15,898	6,193	5,469	45
Other hardwoods	1,132,853	254,526	116,067	361,911	157,012	243,337	46
Noncommercial spp.	1,288,841	-	-	425,001	216,867	646,973	50
Total	50,861,640	26,922,017	10,149,400	6,693,682	2,485,822	4,610,719	55
All species	57,362,376	30,620,753	11,362,640	6,937,060	2,580,212	5,861,711	53

Smith, W. Brad; Hahn, Jerold T.
1989. **Wisconsin's forest statistics, 1987: an inventory update.** Gen. Tech. Rep. NC-130. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 48 p.

The Wisconsin 1987 inventory update, derived by using tree growth models, reports 14.7 million acres of timberland, a decline of less than 1 percent since 1983. This bulletin presents findings from the inventory update in tables detailing timberland area, volume, and biomass.

KEY WORDS: Forest area, timberland, forest inventory, land use, update.

FINDING OUT AND TELLING

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it--in short, "finding out and telling." As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager to meet these challenges while protecting the environment is what research at North Central is all about.

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